FINANCIAL SECTOR REFORM AND ECONOMIC PERFORMANCE IN SUB-SAHARAN AFRICA

OGBEIDE, FRANK IYEKORETIN
(PG/SSC9503037)

DEPARTMENT OF ECONOMICS AND STATISTICS
FACULTY OF SOCIAL SCIENCES
UNIVERSITY OF BENIN
BENIN CITY,
NIGERIA.

NOVEMBER 2015.

FINANCIAL SECTOR REFORM AND ECONOMIC PERFORMANCE IN SUB-SAHARAN AFRICA

OGBEIDE, FRANK IYEKORETIN
(PG/SSC9503037)

Thesis submitted to the Department of Economics and Statistics, Faculty of Social Sciences, University of Benin, Benin City, Nigeria, in partial fulfilment of the requirements for the award of Doctor of Philosophy (PhD) degree in Economics.

NOVEMBER 2015.

DECLARATION

This is to certify that this thesis is the result of my research work in the Department of Economics and Statistics, University of Benin, Benin City, Nigeria, in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy (Ph.D.) in Economics. I declare that no portion of this thesis has been previously submitted for another degree in this University or other institution of higher learning.

Frank Iyekoretin Ogbeide

(PG/SSC9503037)

Signature: _____ **Date:** 29/2/2016

CERTIFICATION

We certify that Frank Iyekoretin Ogbeide carried out this research work in the Department of Economics and Statistics, University of Benin, Benin City, Nigeria in partial fulfilment of the requirements for the award of Doctor of Philosophy degree (Ph.D.) in Economics.

Signature: _____ **Date:** 29/02/2016

Prof. D.E. Oriakhi

(Chief Supervisor)

Signature: _____ **Date:** 29/2/2016

Dr. S.A. Oyefusi

(Co-Supervisor)

Signature: _____ **Date:** 2/3/2016

Prof. A.I. Monye-Emina

(Head of Department)

DEDICATION

I dedicate this work to God Almighty and to my parents, Pastor and Deaconess (Mrs) G.N. Ogbeide, for their support and encouragement throughout my education.

ACKNOWLEDGEMENTS

To the Almighty God, I give my gratitude for His gift of knowledge, guidance, and health without which this research would not have been completed. I wish to also express my sincere appreciation to my amiable supervisors, Professor D.E. Oriakhi and Dr. S.A Oyefusi for their time and effort in guiding me with valuable comments throughout the course of writing this thesis. I will forever be grateful for your guidance, and more so especially Dr. S.A Oyefusi for allowing for personal relationship during the course of the research. Sir, I will always admire and covet your strength and attention to details. I also want to thank my Professors C.E.E. Okojie, M.A. Iyoha, M.I. Obadan, A.I. Monye-Emina, H.E. Oaikhena, S.E. Edo, M.A. Anyiwe, R. Udegbunam and O.T. Ekanem; from you all I have learnt lessons never to be forgotten, and to the entire staff of the Department of Economics and Statistics, especially Dr. C.A.U Ighodaro, Dr P. Sede and S.O. Igbinedion, I am grateful for your valuable inputs into this work.

I also acknowledge the support of the African Economic Research Consortium (AERC) for sponsorship of the Ph.D. programme. I am indeed grateful for the valuable inputs into my career and future. I want to specially appreciate Prof. F. Egwaikhide of University of Ibadan for good counsel, tutorship and for strength he gave me amidst daunting life challenges. To my colleagues in the AERC CPP scheme, I appreciate the interactions we had and the numerous times we had to support each other. It was a blessing meeting each one of you. To Dr. Eric Arthur, Dr. Blessing Oligbi and family, Vera Fuein, Rifkartu Nghargbu, Jacob Novignon, Yemisi Akinkuotu and Saidi Atanda, I say God bless you for being part of my success.

Fondest regards to my little daughter whom I love with life, Emmanuella Oghosa Ogbeide, you make me want to strive for the mastery in all things. Finally, I am also grateful to have two special brothers, Dr. Anthony Ogbeide and Dr. Kingsley Ogbeide, and more so, for their support throughout my studies. And to my childhood friends, Teslyne Ighore Ikponmwosa and Ernest Iserhienrhien, ours have been a pretty co-operative relationship. I sincerely appreciate all your support and others too numerous to mention, especially Oyenmwen Isaac-Oviasu. I pray to God to give you double portions of His blessings in all you do in life.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

SSA - Sub-Saharan Africa

GDP - Gross Domestic Product

GCF - Gross Capital Formation

SAP - Structural Adjustment Programme

HDI - Human Development Index (HDI)

HDR - Human Development Report (HDR)

GMM - Generalized Method of Moments

OLS - Ordinary Least Squares

AERC - African Economic Research Consortium

IMF - International Monetary Fund

UNDP - United Nations Development Programme

VECM - Vector Error Correction Mechanism

ILO – International Labour Organisation

CD - Cobb-Douglas Production Function

ECPI - Economic Performance Indicators

CPS – Credit to Private Sector by the domestic banking sector

ADF - Augmented Dickey-Fuller Statistics

BOP - Balance of Payment

ADB – African Development Bank

AR - Autoregressive

QLL - Quasi-Liquid Liabilities as a percentage of GDP

RIR - Real Interest Rate

SSE - Secondary School Enrolment

IPS - Im, Pasaran and Shin Test

IDA - International Development Association

LIC - Low-income countries.

ABSTRACT

Financial sector reform was part of the structural adjustment programme (SAP) adopted in the early 1980s by countries in sub-Saharan Africa (SSA) with the aim of promoting financial development and macroeconomic performance. Despite this, financial systems have only responded marginally in SSA, raising concerns on the significance of financial reforms in improving financial development, and its transmission effect on economic performance. Besides, empirical evidence explaining the effects of financial reforms on financial development and economic performance appear mixed. Thus, this study investigates the impact of financial reform on financial development, using both traditional panel and the generalised method of moments (GMM) estimator. Further, the study examines the effect of financial reform on economic performance, and lastly, test for causality among financial reform, financial development and economic performance using Multivariate Vector Autoregressive (MVAR) model. The data for the study were sourced from the 2013 World Bank's World Development Indicators (WDI) and International Monetary Fund (IMF) for a sample of 14 SSA countries for the period 1980 to 2012.

The findings from the study indicate that policies of financial reform (especially the reform of domestic banking sector) have led to financial development in the overall SSA countries. Furthermore, results show that financial reform positively and significantly support growth in real output, domestic investment, human development, but, however, reduces the occurrence of macroeconomic instability in the region. These results were significantly different using income and stock market effects, confirming their importance in explaining the effectiveness of financial reform on financial development and economic performance in the continent. Specifically, financial reform has a negative, but significant effect on financial development in low income economies, whereas the impact was positive and significant in countries classified as lower-middle-income and upper-middle-income economies. Financial reform significantly promote growth in real per capita GDP in both low-income and lower-middle-income economies (same with results obtained for the overall sample) but adversely affect per capita income growth in upper-middle-income countries. Results also show that financial reform has a positive effect on human development, irrespective of income classification of sampled countries. However, financial reform

generates economic instability in both lower-middle-income and upper-middle-income countries, but was found to restrain the occurrence of macroeconomic uncertainties in low-income economies. The results show that the presence of domestic stock market (even in country-specific analysis using data from Nigeria and South Africa) improves the positive transmission effect of financial reform across all performance metrics, but raises the possibility of occurrence of macroeconomic instability in the region. From the causality test analysis, financial reform causes financial development in about 36% of the entire sample countries, while reverse causality holds in 14% of the countries, and another 14% showing evidence of feed-back effects between financial reform and financial development. In addition, about 36% of the countries studied show that financial reform causes growth in per capita income, 7.0% revealed that per capita income growth intensifies the need for financial reforms, while 57.0% showed no clear flow of causality. Also, the causality test result shows financial reform lead to human development in over a third of countries covered, while no causation was observed in 57% of the entire sample. Lastly, 21.3% of countries showed that financial liberalisation lead directly to macroeconomic instability, 14.3% shows reversed causality, whereas the remaining 64.3% of sampled countries did not indicate any form of causality.

This study recommends that policy makers in SSA should simultaneously consider the financial and real sectors as interdependent. Governments of countries in SSA should make a conscious effort to reduce or eliminate the negative effects of inflation and natural resource dependence on domestic financial development, and other economic performance fundamentals. Improving access to more diversified financial services/products induced by policies of financial reform would support inclusive growth that reduces poverty and boost human development. Lastly, monetary authorities in the region should promote a prudential framework in line with the unique economic structures of their economy and ensure that policies of financial liberalisation are cautiously implemented in a stable economy with appropriate institutional framework to avoid undesirable outcome.

CHAPTER ONE

INTRODUCTION

1.1 Preamble

The financial sector forms the structure of economic arrangements in any nation and facilitates the conduct of commercial transactions through the use of money for payments and investment (Lin, Sun and Jiang, 2009). Thus, the financial sector can be very instrumental in achieving both short- and long-run economic performance through its intermediating activities in transforming and channelling deposits from surplus economic units (savers) to the deficit units (investment opportunities). It is in this regard that some influential studies have shown that the absence of efficient financial structures, markets and institutions are among the factors undermining economic growth[1] and development in developing countries, including those in sub-Saharan Africa (SSA).

The financial liberalisation theory holds that the process of liberalising the domestic financial system enhances monetary policy effectiveness which should result in improved intermediation efficiency, thereby supporting increased domestic savings, amongst others. Nissanke and Aryeetey, (1998) and Guiso, Sapienza and Zingales, (2006) argue that bank deregulation should improve access to credit due to removal of credit constraint, as well as lower interest rate spreads on the back of increased competition, but can lead to higher non-performing loan problems.

The literature on finance and development suggests that countries with better developed financial systems often experience a higher and faster economic growth trajectory. The theoretical underpinning for this assertion is traceable to the work of Bagehot, (1873), Schumpeter, (1911) and later to independent studies by McKinnon, (1973); Shaw, (1973) and Levine, (2005). The main policy implication of the McKinnon-Shaw hypothesis is that government interventions in form of interest rate ceiling, selective credit schemes and large number of state-owned banks hinders financial sector development, and hence affect overall economic growth. Theorists

[1] See Ndulu, O'Connell, Bates, Collier and Soludo (2000); Oyejide, (2000); Iyoha and Oriakhi (2002); Gulde, Pattillo and Christensen, (2006)

using endogenous growth models explicitly show the important role that financial development plays in stimulating real sector and attaining steady-state growth equilibrium (Diamond and Dybvig, 1983; Greenwood and Jovanovic, 1990; Bencivenga and Smith, 1991; Pagano, 1993; Greenwood and Smith, 1997; Acemoglu, Aghion, Lelarge, Van Reenen and Zilibotti, 2006). These theorists aptly demonstrate how a healthy and developed financial system can propel economic growth, as it better allocates resources and fosters efficient investments. Some authors have also identified financial sector development as a critical factor in inclusive development (Levine, 2005; Demirguc-Kunt, 2006; Beck, 2011), and that by providing higher incentives for saving and investment, financial liberalisation leads to a higher interaction among economic agents (Ahmed and Islam, 2010). In general, the liberalisation theorists believe that financial liberalisation programme leads to higher deposit and lending rates and hence raises the level of savings and credit allocation.

McKinnon, (1973) and Shaw, (1973) propose the financial liberalization thesis in order to remove the negative consequence of financial repression[2] because of their belief that the existence of low and sometimes negative real interest rates is the root cause of macroeconomic instability in most developing countries in the early 1980s. The study by Roubini and Sala-i-Martin, (1992) is among the earliest research works that empirically show how financial repression can negatively affect economic growth. They observed that financial repression leads to inefficient allocation of capital, high costs of financial intermediation, and lower rates of return to savers. This belief is shared by many scholars in SSA who argued that financial repression may have hampered growth and development in the continent. Mwega, Mwangi and Ngola, (1990) notice, for example, that low interest rate discourages savings and financial intermediation, but may facilitate government borrowings which can crowd-out private sector's credit allocation and investments, and lead to credit rationing by the banking system. Agenor, (2004) opines that financial repression leads to financial intermediation inefficiencies, reduces saving and investment in the economy as it raises preference for current consumption, rather than future savings. Hussain, Mohammed and Kameir, (2002) posited that negative real deposit rates divert funds

[2] It is the belief that government control of interest rates, capital flows, and credit allocation, as well as, other non-market restrictions prevent the financial system from functioning at their full capacity (Mckinnon (1973); Shaw (1973); Berthelemy and Varoudekis (1996); Abiad, et. al., (2010).

away from the banking sector which reduces available credit for investment, thereby limiting economic growth. Others, such as Galbis, (1977); Fry, (1997); Kitchen, (1986); and Berthelemy and Varoudekis, (1996) pointed out that a repressed financial sector discourages both saving and investment because the rates of return are lower than what obtains in a competitive market.

Some authors are also sceptical about the validity of the financial liberalization thesis. For example, Stiglitz, (1994) and other Neo-Structralists (the Keynesian-Tobin-Stiglitz School) list three (3) ways in which financial repression can positively influence economic performance. Firstly, they hold that low interest rate can reduce the probability of loan default arising from risky behaviour by investors to boost profit; Secondly, interest rate at low level reduces, on average, the cost of capital, and lastly, the strategy of selective credit programmes (a core component of financial repression) can encourage lending to prioritised sectors with possibility of high technological spill-over.

Most African countries experienced severe distortions in economic performance indicators in the late 1970s and early 1980s[3]. Drastic deceleration of GDP growth set in around 1980, when the average annual growth rate of GDP fell precipitously from 4.9% to 2.2% in the periods of 1976-1980 and 1981-1985, respectively. Following this, most countries in Africa and other developing economies, adopted a number of measures, particularly the Structural Adjustment Programme[4], to restore macroeconomic stability and economic growth (World Bank, 1994; Cavoli, Rajan and Siregar, 2003; Aryeetey and Senbet, 2004). Interestingly, financial sector reform was part of the broad-based economic reforms. The major goals of these adjustment programmes were to pursue broad economic liberalisation measures to enhance resource mobilisation, increase productivity, and eliminate operation deficiencies that had retarded the process of economic development. Between 1986 and 1996, the pace of reform evolved tremendously when it became obvious that developing the real sector of the economy would require the presence of a strong financial system to

[3] Growth was fuelled by revenue from natural resource export, thus making these countries susceptible to vagaries in the global economies. In line Anyanwu, et al., (1997) noted the phenomenal transfer of wealth to African countries during the resource boom era and the bust that led to economic fragility.

[4] The reform package included interest rate liberalization, removal of credit ceilings, introduction of a variety of measures for banking & capital market development, including financial regulatory schemes, & large scale privatization of state-owned enterprises (see, Nissanke and Aryeetey, 1998; Senbet and Otchere, 2005).

efficiently mobilise savings and channel credit to the economic deficit units for investment. In effect, various restrictions were removed to foster liberalization of financial markets throughout most SSA countries.

In contrast to the situation in the 1980s and early 1990s, SSA countries gross domestic product (GDP) grew, on average, by 5.4% between 2000 - 2012 periods, compared to a 3.7% average growth of the entire global economy. Gross capital formation (as a percentage of GDP) also showed some improvements during the period *(see Appendix 1 Table 1).* However, the moderate expansion in GDP in the region has not translated remarkably into improvements in other broad-based economic performance. Recent Human Development Report, HDR, (2013) show that human development statistics for SSA countries still ranks low, compare to other regions *(see Figure in Appendix 1g).* Thereby, raising concerns as to influence of financial reform on human development in the continent.

World Bank (2010) revealed that Africa accounts for 28 percent of total global poor and 1 percent of global GDP, 2 percent of global trade and 3 percent of foreign direct investment as at 2009. The financial sector reform is expected to support financial development to build and foster a competitive and healthy financial system and forestall economic distress. After over three decades of continued financial sector reform across SSA, economic performance has not improved remarkably (Senbet and Otchere, 2005), financial depth and intermediation is still considered relatively low and shallow[5] when compared with other global economic regions. Thus, the short spell of growth success story in the continent, especially before the global economic recession of 2008, shields the reality of unsatisfactory developmental performance in many countries in Africa. It is also not clear whether the varied experiences among SSA countries in terms of financial development and economic performance can be explained by the nature and depth of financial sector reform.

1.2 Statement of the Problem

As earlier observed, countries in SSA have undergone several financial sector reforms over the years since the mid-1980s, but it is unclear whether recent growth

[5] The shallow financial depth applies to almost all SSA countries except for South Africa (Rajan and Zingales, 1998; Ndikumana, 2000; Levine, Loayza and Beck, 2000; Levine, 2005).

experiences in the continent can be explained by financial development induced by policies of financial sector reform and/ or, and what measures of financial reform spur economic performance in the region. Studies that ascertain the extent to which financial sector liberalisation through policy changes have influenced the financial and real sectors is still heavily debated. In other words, it remains unclear to what extent the finance-performance nexus holds true in SSA. There are also very few studies, if any, that investigate the impact of each components of financial sector reform policies on the real economy in SSA.

Despite advances in finance-growth literature, empirical findings on linkage of financial sector reforms, financial development and economic performance remain inconclusive and unresolved (see for example, Robinson, 1952; Mathieson, 1980; Jung, 1986; Lucas, 1988; King and Levine, 1993b; Lewis, 1995; Luintel and Khan, 1999; Levine, Loayza and Beck, 2000; Al-Yousif, 2002; Allen, Carletti, Cull, Qian, and Senbet, 2010). This conflicting linkage has dire implication on the design and implementation of financial sector reform strategies in SSA. Moreso, most extant researches used monetary aggregates as proxy for financial reforms, which is rather restrictive, even as very few studies have attempted to examine these linkages, using income-effects and stock market effects, while a smaller number, if any, explain the causality among financial sector reform, financial sector development and economic performance in SSA or study the impact of financial sector reform on broad-based economic performance indicators, other than economic growth[6]. More so, extant studies employed the traditional two-variable causality test with its known limitations, thus this study conducted tests for causality using a six-variable vector autoregressive model (VAR) in a production function context, thereby circumventing any possible specification bias. Exploring the nature of these relationships would improve policy making and informed strategy that could stimulate higher economic performance trajectory amongst SSA countries.

1.3 Research Questions

In light of the unsettled debate on the nexus among financial sector reforms, financial sector development and economic performance, the question remains as to what

[6] Economic performance indicators used in this study include real GDP, gross capital formation (domestic investment), human development and economic misery (macroeconomic instability).

specific components of financial sector policies support financial development, and what policies of financial reform explain real sector performance in SSA. Another yet to be explored area borders on finding whether there are common factor(s) or similar financial sector policy that both encourage financial development and boost economic performance. Specifically, this study seeks to answer the following questions.

i. Does financial sector reform influence financial sector development in SSA?
ii. Does financial sector reform have any effect on economic performance in SSA?; and
iii. Is there a causal relationship among financial sector reform, financial sector development and economic performance in SSA?

1.4 Objectives of the Study

The aim of the study is to ascertain the impact of financial sector reform on financial development and economic performance in sub-Saharan Africa (SSA) countries. Thus the specific objectives of the study are to:

1) determine the effects of financial sector reform on financial development in SSA;
2) investigate the effects of financial sector reform on economic performance in SSA; and
3) examine the causal relationship among financial sector reform, financial sector development, and economic performance in the continent.

1.5 Research Hypotheses

The following hypotheses are formulated to guide the study.

1) Financial sector reform has no significant impact on financial sector development in SSA countries;
2) Financial sector reform has no significant impact on economic performance in SSA; and
3) There is no causal link among financial sector reform, financial sector development and economic performance in SSA.

1.6 Significance of the Study

SSA countries face the challenge of deepening and strengthening their financial sector, sustaining growth and translating this to concrete measure of development. At the root of this are the need to have a more robust understanding of the link between financial sector reform and financial development on the one hand, and financial sector reform and economic performance on the other hand.

The study contributes to the empirical literature on finance-growth nexus in two ways. The first is the use of financial sector reform indicator that shows the gradual implementation of financial liberalisation policies in SSA, unlike extant studies that employed mainly financial development variables as proxies for financial sector reforms (see Gelb, 1989; King and Levine, 1993a; Dematriades and Hussain, 1996; Rousseau and Wachtel, 1998; Benhabib and Spiegel, 2000; Arestis and Glickman, 2002; Ang and McKibbin, 2007; Waheed, 2009). These aforementioned studies employed mainly monetary aggregates as proxies for financial reform, however this present study employed and modified financial reform database developed by Abiad, Detragiache, and Tressel, (2010). The index covers broader dimensions of financial liberalisation[7], including ease of restriction in international capital flows and policies to deepen the security markets. Secondly, while existing studies focus on the relationship between financial development and economic growth, this study extends the focus to ascertaining the effects of policies of financial reform on economic development, and employs other mainstream economic performance indicators, such as gross capital formation (as a percentage of GDP), human development, and macroeconomic instability. This study examines the impact of financial sector reform on these broad-based macroeconomic performance metrics, as well as its effects on real GDP per capita. In essence, this study investigates the impact of aggregate policies of financial sector reform on not just economic growth[8] but also on some numeraire of welfare measures, namely human development and societal economic misery situation.

[7]These include policies on credit controls/high reserve requirements; interest rate controls; entry barrier; state ownership in banking sector, prudential regulation/banking supervision; securities market; and lastly, external account openness.

[8] While this study used human development index as a measure of societal welfare/economic performance, some cross-country studies found link between financial development and poverty reduction (Arestis and Caner, 2004; Clarke, Xu, and Zou, 2006; Claessens and Feijen, 2006).

On the methodological side, the study employs both traditional panel and dynamic panel estimation procedures. The latter circumvents the problem of endogeneity which tends to overestimate the panel parameter coefficients. In general, this study explores the use of these relatively recent econometric techniques with the intention of understanding how financial sector reforms impact financial development and economic performance in SSA countries. Analysis of the impact of financial sector reform on each economic performance indicators employed in this study may shed light on policy flexibility and the desirability of balancing number of goals faced by policy makers. Also, this study contributes to the finance - economic performance nexus by constructing a six-variable VAR model to test for causality in each of the sampled SSA countries, rather than the traditional two-variable granger causality test and as such this study avoids possible specification bias in extant studies.

In addition, this research may also stimulate further studies to discuss the finance–economic performance relationship. Findings from causality test in this study may provide a good framework for further studies and may also be relevant to policy makers in determining which sectors of the economy to prioritise, while also revealing the nature of the relationship between finance and the real economy.

1.7 Scope and Limitation of the Research

The study uses annual data of SSA countries from 1980 to 2012 with verifiable record of conduct of financial sector reform. The focus is mainly on fourteen (14) SSA countries which are listed in the International Monetary Fund, IMF's index of financial sector reform developed by Abiad, et. al. in 2010. These countries include Burkina-Faso, Cameroon, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Madagascar, Mozambique, Nigeria, Senegal, South Africa, Tanzania, Uganda and Zimbabwe. Therefore, this study limits its analysis to these 14 countries contained in the index for consistency. This will help shed light on the definite relationships that exist between policies of financial reform and economic development among African countries. Furthermore, the countries chosen for this study account for over 70% of the SSA banking market share, therefore, it is prudent to surmise that the sample is a fair representative for generalising findings to the entire continent.

One key limitation of this study is the nature of data employed for empirical analysis. The data used are essentially obtained from secondary sources and as such results obtained would depend on the quality of these data. The use of high frequency data would have been preferred for analysis, but are generally unavailable for most macroeconomic indicators, and hence forcing the adoption and use of mainly annual time series data in this study. In addition, it may also be interesting to further explore the interrelationship among policies of financial sector reforms, financial development, and broad-based macroeconomic indicators, using other modelling and estimation techniques, such as Computable General Equilibrium Micro-Simulation Framework to see how these compare with the dynamic and traditional panel model specification approaches employed in this study.

1.8 Organization of the Thesis

For ease of exposition and comprehension, this study is organised into six sections. Following this introductory chapter, Chapter two provides a background to the study. In chapter three, theoretical and empirical literatures that relate to the subject matter are discussed. Chapter four provides the theoretical framework for model specification while empirical results and interpretations are presented in chapter five. The final chapter contains the summary of findings, policy implications and some concluding remarks.

CHAPTER TWO

FINANCIAL SYSTEMS IN AFRICA: NATURE, DEPTH AND GROWTH PATTERN

2.1 The Structure and Functions of Financial System

Financial system remains crucial for healthy of any economy in a number of ways because it provides four (4) basic services essential for the smooth functioning of an economy (see Perkins, Radelet and Lindauer, 2006). First, it provides a medium of exchange, store of value, and serves as a unit of account to measure the value of transactions. Second, it provides channels for mobilising savings from numerous sources and channelling them to investors, a process called financial intermediation. Third, it provides a means of transferring and distributing risk across the economy. Fourth, it provides a set of policy instruments for the stabilising economic activities. By mobilising savings from economic surplus units and providing funds to investors, financial system boosts investments, and also enhances efficiency in allocating scarce resources.

Financial system consists of a variety of interconnected financial institutions; both formal and informal (Camen, Ncube and Senbet, 2008). The central bank lies at the core of the financial system, and oversee activities in the financial market as well as control of money supply. Banking institutions, which accepts deposits and gives short-term credit, are the most visible and vital component of the formal financial systems in SSA, and is located mainly in urban areas. Others non-bank institutions, like insurance companies, pension funds, discount houses, bureaux de change and investment banks, specialises in long-term credit, although the scale of operations remain relatively low in the continent.

The informal financial sector is known to coexist (often not integrated) with the formal institutions in most low-income economies and some middle-income countries and are generally not regulated. These organisations include pawnshops, local moneylenders, trade and cooperative societies. Informal mode of financing has been observed to thrive in countries like Ghana, Nigeria, Burkina Faso, Tanzania and Malawi, even after decades of reforms in formal financial system took centre stage across countries. This may be attributed to the fact that significant portion of the

region's households live in poverty and do not have access to elementary banking and financial services due to their low level of income (see Aryeetey, 1994; Chipeta and Makandawire, 1996; Soyinbo, 1996; Ray, 2015). The formal financial system is further sub-divided into money and capital market and both remains broadly regulated in line with prudential guidelines in most African countries. Figure 2.1 shows the structure of financial system in most SSA countries.

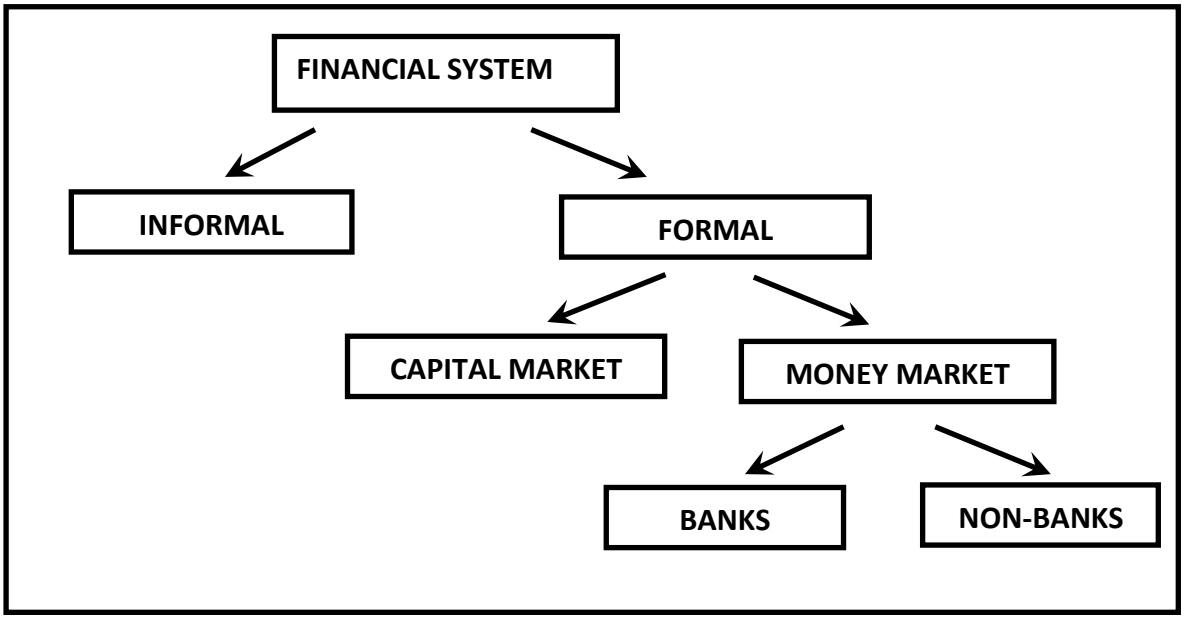


Figure 2.1: Structure of Financial System
Source: Author.

The capital market is a channel for mobilising long-term funds and can be classified into primary and secondary markets. Although activities in the markets have increased in a number of SSA countries with domestic stock markets, like South Africa, Nigeria, Cameroun, Ghana, Kenya, Mozambique, Tanzania, Uganda and Zimbabwe, the depth and sophistication of instruments traded remain shallow in almost all SSA countries, except for South Africa (see Rajan and Zingales, 1998; Ndikumana, 2000; Allen, et al.,2010). Moreover, the money markets constitute the hub of the financial systems in SSA and are broadly composed of banks and non-bank financial institutions. Money market activities in the region are considered ineffective, and instruments are predominantly used by most central governments in developing countries to raise funds for fiscal sustenance (see Aryeetey and Senbet, 2004).

With strong presence of money market operations, Gulde, Pattillo and Christensen, (2006) argued that banking sector covers more than 80% of the assets of the entire

financial system in most SSA countries. Despite the relatively high level of concentration of banks in the continent, a survey by Claessens, (2005) on access to financial services in 29 SSA countries show that only 11% of households had access to savings accounts, compared to 25% in other low- and middle-income countries and 90% in industrial countries. Botswana and South Africa have close to half of their population having access to banking services, marking the highest in Africa, but for Chad and Central Africa Republic, less than 1% of their population have access to savings account which represent the lowest in the continent.

Table 2.1 and *Figure 2.2* show the growth pattern of ratio of broad money to GDP (M2/GDP) for selected SSA countries. From the table, the level of financial depth in 2011 has risen over figure observed in 1990; however there is no clear-cut pattern of growth among countries at different income categories. Low-income economies, like Uganda recorded higher growth in M2/GDP over the sample period than all countries in the lower-middle-income categories, as well as upper-middle-income economies, like South Africa. Tanzania also recorded appreciable growth over the same period, representing 47.4% rise over 1990 figure. In sum, M2/GDP growth across sampled countries, irrespective of income classifications may point to the relative effectiveness of financial reform adopted in the region since the early 1980s.

Table 2.1 Growth Pattern of Financial Depth (M2/GDP) in SSA Countries

Countries	1990	2011	% M2/GDP Growth (1990 to 2011)	Income Groupings By The World Bank
Burkina Faso	18.2	27.8	34.4	Low-Income
Ethiopia	26.3	31.0	15.2	Low-Income
Kenya	27.1	46.9	42.2	Low-Income
Madagascar	15.8	23.0	31.3	Low-Income
Mozambique	22.9	37.3	38.6	Low-Income
Tanzania	17.0	32.2	47.4	Low-Income
Uganda	6.2	25.3	75.6	Low-Income
Zimbabwe	36.2	37.5	3.5	Low-Income
Cameroon	21.3	21.9	2.5	Lower-Middle-Income
Cote d'Ivoire	29.1	38.5	24.3	Lower-Middle-Income
Ghana	13.3	26.9	50.6	Lower-Middle-Income
Nigeria	19.4	32.8	41.0	Lower-Middle-Income
Senegal	23.1	38.9	40.6	Lower-Middle-Income
South Africa	51.0	73.2	30.4	Upper-Middle-Income

Source: Author, data obtained World Bank

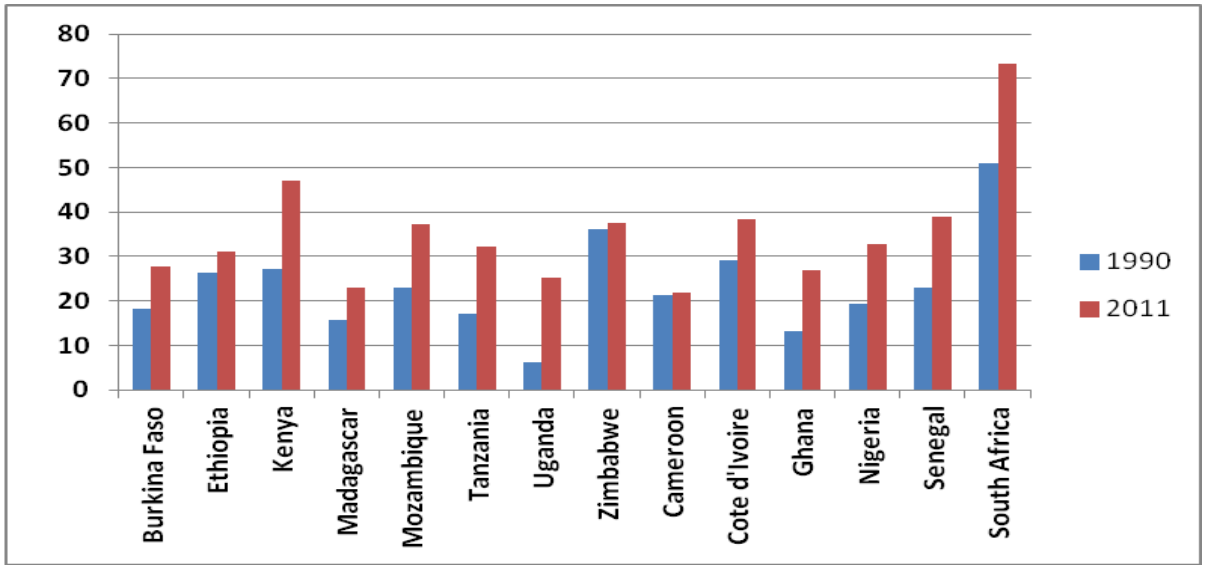


Figure 2.2: Financial Depth in Selected SSA Countries (1990 Vs 2011 Periods)
Source: Author, but underlying data from the International Monetary Fund.

Financial intermediation is seen as one of several technologies for mobilising and allocating savings. Financial systems also bring together economic agents who wish to save with those want to invest. The benefit here is that financial system helps to reduce transaction and information costs by synchronising the decisions of households (savers) and firms (borrowers); thus, financial sector is relatively active in boosting capital formation. Capital fundamentalism was essentially the main development strategy in many countries in the 1950s and 1960s (see Perkins, et al., 2006) and it holds that capital formation is the main driving force for high economic growth. Also see studies by Solow, (1956); De Gregorio, (1992); Jappeli and Pagano, (1996); Katircioglu and Naraliyeva, (2006).

Additionally, Gulde, Pattillo and Christensen, (2006), observed that legal and institutional frameworks remain relatively underdeveloped across most SSA, making it difficult for financial institutions to obtain information about clients' creditworthiness, compared to other low-income countries (LIC) outside SSA region. Studies have identified weak property rights and poor enforceability of contracts as the major abiding constraints to financial market maturity in SSA. Hence, financial institutions in the region are reluctant to lend to small and medium enterprises (SMEs) because of difficulties in securing collateral and seizing assets in the case of loan defaults. Studies by Chirwa, (2001); Beck, (2011); Kurronen, (2012) noted that the financial system is further impeded by the nature of institutional arrangements,

structure of economy as well as operating business environment. Resulting from poor institution quality, banks in the region charge high lending rates while deposit rates are kept at low levels. Hence SSA banks are known to be highly liquid and profitable due to the prevalence of wide gap between lending and borrowing interest rates (see Beck, 2011). The wider the gap, the less efficient is the level of financial intermediation (see Mwega, Mwangi and Ngola, 1990; Senbet and Otchere, 2005), because it increases cost of funds which reduces profit/returns from investments. As a result, investors may engage more in speculative and risky businesses, rather than productive activities to increase level of domestic output. This may in turn lead to higher non-performing loans in the banking system and generate loss of confidence in the economy that could undermine real sector growth.

Financial system also provides instruments for stabilisation of economic activities in addition to options available under fiscal policy and direct controls. All economies experience cyclical changes in production, employment and prices, and hence, attempts at stabilising these economic misalignments, including the occurrence of financial crisis, are often resolved within the financial sector. Policy makers have had to devote much attention to ensuring the integrity and stability of banks and other non-bank financial institutions to avoid occurrence of high inflation, severe recession and general loss of confidence. In addition, the increasing attention to developing the domestic financial system has raised the level of financial integration amongst global economies, SSA inclusive. Lamba and Otchere, (2001) noted that the rising presence of foreign investors in most African financial markets is as a result of increasing removal of constraint to international capital flows and increasing attempts at deepening the financial system. Financial globalisation is associated with greater freedom of domestic firms to undertake cross-border commercial borrowing, which helps firms to grow faster as it enable them overcome financing constraints (see Rajan and Zingales, 1998; Beck, Demirguc-Kunt and Maksimovic, 2005).

2.2 Financial Sector Reform in SSA: Rationale and Elements

Financial sector reform forms a core element of macroeconomic and structural reforms in most SSA countries. It involves the elimination of credit control, deregulation of interest rates, easing of entry into the financial service industry, development of capital market, increased prudential regulation and supervision, and

liberalization of international capital flows (Baliamoune and Chowdhury, 2003). Most developing countries, like SSA, undertook the implementation of financial sector reform as part of a broader structural and economic reform to develop the real sector of the economy when it became obvious that expanding real sector activities require a strong financial system to efficiently mobilise savings for investments. These economies adopted the structural adjustment programme (SAP) in the early 1980s as their domestic economic superstructures began to show immerse signs of strain (World Bank, 1994; Cavoli, Rajan and Siregar, 2003).

A recent study on Challenges and Opportunities of Banking in SSA by Mlachila, et al., (2013) noted that despite over three decades of financial sector reform process, most banking systems in SSA are still relatively small in absolute and relative sizes and are often characterized by low loan-deposit ratios. As a corollary, these banks hold large shares of assets in the form of government securities and liquid assets, and with lending mainly short-term (about 60% of loans with maturity of less than one year). McDonald and Schumacher, (2007) and Mlachila, et al., (2013) emphasised further that the aforementioned features of SSA banking systems reflect a combination of factors, which include low levels of income and financial literacy, large informal sectors, weak framework for enforcing creditor rights and contracts, amidst other institutional uncertainties emanating from socio-political and macroeconomic risks.

Elements of financial sector reform adopted by most SSA countries revolve around seven (7) core areas: These included: removal of credit controls and setting of high reserve requirements, interest rate controls and barrier to entry by foreign banks. The others are privatization of domestic banks, increased bank supervision and policies aimed at liberalising the capital accounts and securities market. Ghana and Mauritius adopted the Structural Adjustment Programs (SAP) in 1983, and both countries were among the first to do so in the continent, but they delayed implementation of interest rate liberalisation to 1988 and 1993, respectively. *Table 2.2* shows financial reform in selected SSA countries, as well as the sequence of interest rate liberalisation, bank restructuring and privatisation.

Another key aspect of financial sector reform involves the establishment of stock exchanges in the continent. Stock market provides long-term funds that are crucial to the process of economic growth and development (Edo, 2009) and thus are the citadel of investment/capital formation, with attendant benefit of economic growth. However, the link between stock market performance and economic growth has generated strong controversy among analysts based on findings from their study of developed and emerging markets (Samuel, 1996; Demirguc-Kunt and Levine, 1996; Levine and Zervos, 1996; Obadan, 1998). There are several indicators to measure the size and liquidity of the stock market and one of the prominent one is the extent of capitalisation of the market. From data, the ratio of stock market capitalisation to GDP in South Africa is comparatively high viz-a-viz other African countries. It is no doubt the country has Africa's largest stock market. Zimbabwe, Kenya and Cote d'Ivoire also witness appreciable rise in stock market capitalisation. We looked more closely at the stock market development in Africa in sub-section 2.6 below.

Table 2.2: Financial Reform and Establishment of Stock Exchanges in SSA

Country	Year of Reform (SAP)	Liberalisation of Interest Rates and Credit Markets	Restructuring of Banks	Privatization of Banks	Establishment of Stock Exchanges
Benin	-	1989	-	-	-
Botswana	1991	1991	-	-	1989
Cameroon	-	1990	-	1998	-
Cote d'Ivoire	-	1989	-	1999	1976*
The Gambia	-	1986	-	-	-
Ghana	1983	1988	1989	1997	1990
Kenya	1989	1991	-	1989	1954*
Madagascar	-	1994	-	1999	-
Malawi	1987	1988	1990	-	1996
Mauritania	-	1990	-	-	-
Mauritius	1983	1993	-	-	1988
Namibia	1992	1991	-	-	1992
Nigeria	1986	1986	1990	1992	1960*
Tanzania	1985	1991	1991	1994	1998
Uganda	1987	1988	-	1996	1998
Zambia	1991	1992	-	-	1994
Zimbabwe	1991	1991	-	1997	1946*

*Shows countries with stock markets (although were relatively shallow) before adopting SAP
Source: Senbet and Otchere (2005).

2.3 Benefits of Financial Sector Liberalisation

Most economic commentators and finance analysts have shown that adopting policies of financial reform would improve productivity and hence would potentially accelerate economic growth trajectory. The areas of impact often cited include:

(a) Increase in propensity to save and more savings available to investors.

Under a repressed financial system, a phenomenon common in developing countries for the purpose of achieving adequate flow of bank credits to priority sectors, interest rates are held below their competitive level. This effect lowers both savings and investment and causes a high disparity between lending and borrowing rates which may also induce a lower volume of business (Kitchen, 1986; Ahmed and Islam, 2010). McKinnon, (1973) and Shaw, (1973) propose that financial liberalisation policy will result in an increase in deposit rates (in real terms) to their competitive market-clearing levels. Thus, the outcome of financial liberalisation is expected to correct non-market disparities through allowing market determination of all institutional interest rates and also stabilising inflation. In essence, the combined impact of these changes will lead to rise in real interest rates. Consequently, by providing higher incentives for savings, financial liberalisation leads to higher interaction amongst economic agents as both savings and investment levels improve (Ahmed and Islam, 2010). More so, by opening up the financial sector and allowing competition among players in the financial system, the market mechanism works better in predicting interest rates. In response, potential depositors will switch to the new alternative of saving in time deposits rather than investing in real low-yielding long term assets. Ultimately, financial liberalisation enhances financial deepening process as part of the general benefit derived from financial reforms (Gibson and Tsakalotos, 1994). Financial liberalisation, thus lead agents to reconsider their investment portfolios, since savings in financial assets (which may be more flexible in terms of liquidity) are now more equally rewarding and hence make more investible funds available within the economy (Aziakpono and Babatope-Obasa, 2003).

(b) Allocative efficiency and improved performance of investment.

In a repressed financial system, a number of mechanisms ensure that enough credit flows to perceived-necessary projects earmarked to receive higher proportions of

loans from both public and private sources[9]. Indirectly, under such a system, market mechanisms will favour the direction of credit to so-called priority areas. When interest rates are repressed, banks cannot properly match the expected returns and assumed risks. Hence, Sikorski, (1996) observed that financial institutions will not be able to match perceived risk characteristics of projects by charging a higher lending rate to compensate for the possibility of non-payment on loans maturity date. This is possible in a liberal market environment as banks can match returns to risk by adjusting the lending rates depending on the likelihood of default. Furthermore, due to high demand for credit given the lower interest rate, effective classification of borrowers become a major constraint such that banks rely on directing credit to prioritised sector required by the government. In sum, this attitude by lenders, thus, do not constitute an efficient allocation or an optimal use of scarce resources. In contrast, financial liberalisation involves eliminating all the above non-market mechanisms, paving the way to only market systems of pricing to allocating funds. Financial reforms also enhance the efficiency of investment through effective use of resources, which will ultimately improve the level of productivity, as it also help to diversify liquidity risks through pooling of resources from different depositors. Moreso, reforms that enhance financial deepening will also induce changes in the quality of lending. This is because as the real lending rate increases, the pool of unviable projects would be eliminated, resulting only in funding of high-paying profitable projects at market-clearing lending rates. Hence, given the same level of total savings in an economy, financial liberalisation process is able to simultaneously increase the quantity and quality of investments.

(c) Reduction in corruption and rent-seeking activities.

The implementation of a financial liberalisation policy will reduce government participation in the allocation and pricing of credit, leading to drastic reduction or elimination of subsidies and incentives (Ahmed and Islam, 2010). Furthermore, because of the market-clearing interest rate level, most forms of government intervention are not warranted as there are enough funds for every project that is worth investing in at the market determined rate. On the basis of this, the allocational-

[9] Since interest rates are repressed, that is, administratively held at low levels, banks face surplus number of investors requiring financing, such that available credits are directed or allocated by government agencies. Measures include setting of quantitative credit guidelines, concessional rates of interest to specific sectors and special credit directives.

related incentives of corruption, political influence and rent-seeking are reduced since only the market-determined interest rates play the allocative role of equating demand and supply for loanable funds. The distribution criteria will be based on creditworthiness (repayment abilities) and riskier projects will only receive funds at a higher rate of interest, while safer projects will be able to borrow elastically.

(d) Level of competitiveness.

The process of financial liberalisation enhances competition by attracting prospective players with economies of scale and scope to enter the domestic financial market. In this regard, financial liberalisation leads to a change in financial structure that can encourage entrance of foreign banks. In post-liberalisation, both volume of loans to be channelled and profitability prospects are enhanced, signalling room for more banks. On the other hand, as countries adopt legal frameworks that remove entry barriers into the banking sector would likely see the influx of potentially viable foreign financial institution with global experience. The resultant rise in number of domestic banks will raise the level of competition and as such provide greater pricing competition for banking services. Consequently, this will induce vibrant competition and influence interest rate spread negatively, and depositors may gain due to an upward rise in savings rate. Kitchen, (1986) points out that if the banking sector is competitive, then the disturbance from equilibrium position caused by differential borrowing and lending rates may be slight. Moreover, with the assumption that intermediation margin is an indicator of efficiency; in this process the level of financial efficiency may be significantly enhanced (Nissanke and Aryeetey, 1998). Therefore in principle, as noted by Chirwa, (2001), competitive pressures that result from condition of free entry and competitive pricing will raise financial efficiency of intermediation by decreasing the spread between deposit and lending rates. Competition resulting from financial liberalisation also reduces oligopolistic market power on the short-run even as the intermediating margin is expected to narrow considerably on the long run.

(e) Curb market rate

In an economic system, especially in developing countries, where financial markets are segmented into formal and informal (curb market) sectors, financial liberalisation may lead to decline in average lending rates in an economy. This is because as more borrowers have access to the formal (banking) financial market, the demand for loans

and interest rates in the curb market may decline (Chipeta, 1994). If the players in the curb market are to compete and remain active, they will have to lower their lending rate compared to cost of fund in the formal sector. This benefit of lower interest rates will result in a gain to the whole economy since some borrowers who are rationed out of the formal financial market will have access to credit to engage in trading activities (Chipeta, 1994). A different analysis is that if both formal and informal financial sectors are more complementary, money lenders in the informal sector can access credit in the formal banking sector, and thus increases the volume of funds available to borrowers at possibly lower interest rates. However, if there is little competition between formal and the curb markets, any borrower excluded from the formal sector would face a relatively higher interest rate to obtain required credit in the curb markets. This in addition would make the pool of borrowers in the curb market mainly high risk with increasing tendency for strategic loan default. In sum, financial liberalism would make interest rates charged in the curb market to decrease provided there is complementarity between the formal and the informal (curb market) sectors.

2.4 Review on Financial Sector Performance of Selected SSA Countries

a. Ratio of Broad Money/GDP and Private Credit/GDP in Selected SSA Countries

The ratio of broad money to GDP (M2/GDP) and private credit to GDP are among the traditional (monetary) measures to capture the depth of financial development. *Table 2.3* shows the level of financial development among African countries as measured by the ratio of broad money to GDP (M2/GDP). From the table, South Africa, Zimbabwe and Kenya between 1990 and 2011 showed some promise averaging 58%, 37.1% and 36%, respectively. In general, the trend of the ratio of banking sectors credit to GDP appears lowest in SSA compared to other global regions (*see figure 2.3*). Credit issued by financial institutions to the private sector as a share of GDP reflects the extent to which financial services are provided to the private sector, thereby making the metrics a good barometer for evaluating the depth of financial sector in any economy.

Thus, *figure 2.3* aptly demonstrates the low degree of financial intermediation to the private sector of the economy in the overall SSA region compared to other regions. This indicates the limited extent to which the private sector relies on the domestic

financial sector for project financing. From the figure, the level of private credit by domestic money banks as a percentage of GDP remained below 20% for most of the years, especially between 1995 and 2009, and this trend represents the lowest in the world. Countries in East Asia and the Pacific, as well as those of Latin America and the Caribbean were among the high performing continents with relatively remarkable credit to the private sector (*Table 2.4)*. This performance could be adduced to effective financial liberalisation strategy adopted in Asian countries, which was adjudged more successful than in Africa (see Pill and Pradhan, 1997). The relatively strong financial depth in Asia during the period could explain the remarkable economic growth success stories experienced in those parts of the world. Specifically, only South Africa and Mauritius from the table are in tandem with global average of about 60%, while the metric hovers around 30% in other SSA countries. The low private credit/GDP ratio has dire implication for real sector growth in the region.

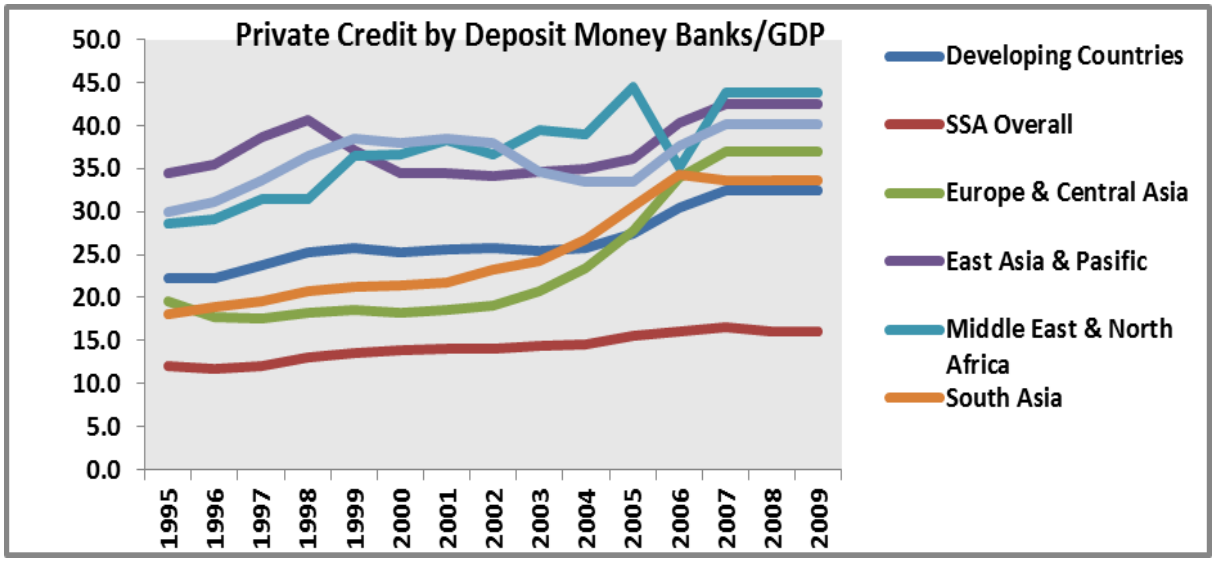


Figure 2.3: Private Credit by Banks/GDP across Global Regions,1995 – 2009.
Source: Author, but underlying data from the International Monetary Fund.

b. Ratio of Liquid Liabilities/ GDP in Selected SSA Countries

Liquid liabilities as a ratio of GDP is a measure of financial development and used in empirical literatures to show the extent of financial intermediation in an economy. *Table 2.5* shows the time-series data of liquid liabilities of SSA countries and other global regions. From the *Table*, Mauritius, South Africa, Ethiopia and Kenya provides evidence of improved financial sophistication in their respective financial markets, although in Ethiopia, the central government still owns and controls vast number of

banks. From *figure 2.4*, *the* trend analysis of liquid liabilities/GDP in SSA appears to be the lowest, compared to other regions. This aptly shows the low level of financial intermediation and lack of sophistication in SSA financial systems, although maintaining an upward trajectory since 1995. This posture is also held by Senbet and Otchere, (2005). Comparing the trend of liquid liabilities of the 14 sampled countries and the overall SSA countries in *figure 2.4*, further confirms that our sample for this study represents a relatively good spread across SSA countries.

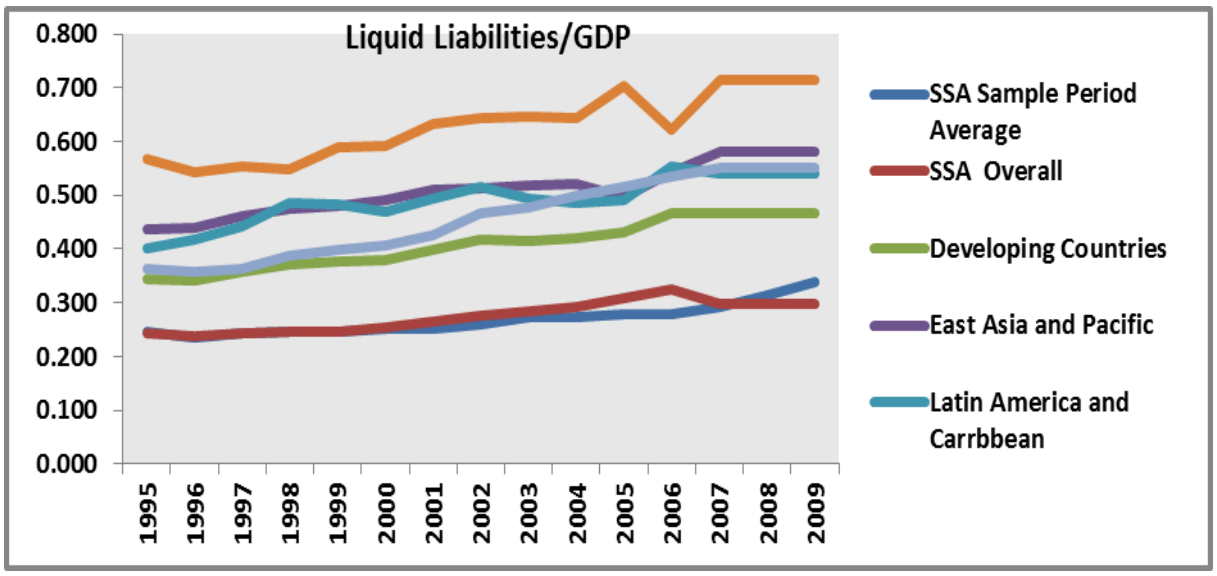


Figure 2.4: Ratio of Liquid Liabilities to GDP, 1995 – 2009
Source: Author, but underlying data from the International Monetary Fund.

c. Interest Rate Spread in Selected SSA Countries

Interest rate spread in the SSA region, often used to measure financial intermediation efficiency, remained higher than the global mean, which is mainly in single digits in developed worlds. The spread rose precipitously between 1995 and 2011, especially in Zimbabwe, Ghana and Madagascar by over 573 basis points (bps), 48.7 bps and 23.6bps, respectively *(see Table 2.7)*. Interest rate spread is the difference between deposit and lending rates. As financial reforms intensify, the gap between both rates is expected to decline due to increases in competition amongst banks, which may lead to higher efficiency and improved societal welfare. The higher gap raises borrowing costs, lowers profits, savings and also leads to a decline in capital allocation (Ahmed and Islam, 2010). On the other hand, Burkina Faso, Cote d'Ivoire, Nigeria, Senegal and Uganda also witnessed appreciable increases during the same period, which could be a symptom of inappropriate bank management. For Mozambique, Tanzania and

Kenya, the spread declined by over 110bps, 9.3bps and 6.1bps, respectively, indicating perhaps, improved financial intermediation due to reform process. The spread in Ethiopia, South Africa and Cameroun were broadly sideways. In the period, interest rates spread in SSA remains wide when compare with world's average, implying that banking sector in SSA is the least efficient in the world.

Nissanke and Aryeetey, (1998) attributed the occurrence of wide interest rate gap in most African countries to the oligopolistic nature of the financial (banking) system. This include lack of competition, high cost of operations, lack of well-functioning equity market, as well as poor macroeconomic environment with spiralling inflationary tendencies. Meanwhile, Ndungu and Ngugi, (2000); Mlachila and Chirwa, (2002) posit that one of the major concerns of policy makers in SSA region is the persistently wide interest rate spread. With most SSA governments relying heavily on their domestic financial system for fiscal sustenance, lending interest rate may be pushed further upwards, and with savings rate relatively unaltered, the gap between lending and savings rate could become even wider, thereby crowding-out private sector investment. This outcome has vast effect on capital formation and economic growth.

Table 2.3: Financial Depth (M2/GDP) for Selected SSA Countries (1990 – 2011)

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2007	2008	2009	2010	2011	End-Period Average
Burkina Faso	18.2	17.7	18.4	19.1	19.6	21.8	22.1	22.8	21.4	19.4	20.4	19.1	17.4	20.9	22.6	21.3	21.7	24.2	26.3	27.8	21.1
Cameroon	21.3	21.5	20.7	16.0	15.4	14.8	12.6	12.0	12.4	12.9	14.0	14.3	14.9	15.8	15.7	16.8	17.9	20.1	21.1	21.9	16.6
Cote d'Ivoire	29.1	28.6	28.5	26.6	22.1	24.0	23.5	22.6	22.0	21.9	22.4	22.6	26.5	26.1	22.6	27.0	27.8	29.9	33.8	38.5	26.3
Ethiopia	26.3	28.0	30.6	26.7	29.2	28.2	27.3	29.0	32.7	32.8	32.8	35.8	41.3	42.7	42.0	36.4	31.0	31.0	31.0	31.0	32.3
Ghana	13.3	13.4	17.0	17.3	18.6	18.4	17.7	20.2	21.2	21.7	23.2	25.8	29.3	28.1	29.2	22.3	23.6	25.4	26.0	26.9	21.9
Kenya	27.1	28.4	31.4	33.0	34.4	37.5	32.2	35.2	35.3	34.7	34.3	34.3	36.4	37.0	37.0	38.7	39.6	41.0	45.5	46.9	36.0
Madagascar	15.8	17.7	19.2	20.7	20.5	18.1	17.5	18.6	18.6	18.3	19.3	20.5	23.4	22.5	21.9	20.6	20.6	22.3	22.4	23.0	20.1
Mozambique	22.9	19.1	23.9	25.4	23.9	22.9	16.9	17.1	17.7	19.7	23.5	22.8	24.5	27.4	26.1	29.2	30.8	35.3	38.4	37.3	25.2
Nigeria	19.4	20.8	16.8	16.9	18.8	14.8	12.2	13.6	16.9	19.1	18.6	22.0	20.1	19.0	16.7	22.5	30.1	38.1	36.1	32.8	21.3
Senegal	23.1	22.8	23.8	22.4	18.7	19.9	20.5	20.9	20.4	21.2	22.6	23.7	25.2	28.2	32.1	34.3	33.2	35.2	37.5	38.9	26.2
S/Africa	51.0	51.0	49.8	45.5	45.2	46.6	47.5	49.8	53.1	54.4	52.3	53.8	55.9	59.4	60.5	74.8	79.2	80.5	75.7	73.2	58.0
Tanzania	17.0	17.5	18.9	21.0	21.5	22.0	21.0	18.6	15.7	15.5	16.0	18.0	20.3	21.2	21.2	27.2	27.6	28.8	30.6	32.2	21.6
Uganda	6.2	7.2	7.7	8.8	11.1	11.2	11.5	12.7	13.5	14.7	14.9	15.4	17.2	18.1	16.5	19.0	20.8	20.9	23.2	25.3	14.8
Zimbabwe	36.2	20.3	19.2	19.9	22.6	24.7	24.0	27.9	31.4	19.6	22.5	37.5	101.7	119.0	50.3	53.9	31.4	19.6	22.5	37.5	37.1
SSA Sample Period	23.3	22.4	23.3	22.8	23.0	23.2	21.9	22.9	23.7	23.3	24.1	26.1	32.4	34.7	29.6	31.7	31.1	32.3	33.6	35.2	
SSA Sample Annualised Growth Rate	-	1.96	2.04	1.98	2.01	2.01	1.94	2.05	2.04	1.98	2.03	2.09	2.24	2.07	1.85	2.01	1.98	2.04	2.04	2.05	

Source: International Monetary Fund, World Economic Outlook Database.

Table 2.4: Private Credit by Deposit Money Bank/GDP for Selected SSA Countries from 1995-2011.

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Period Average
Botwana	13.0	11.4	9.7	10.5	12.6	14.0	13.9	16.7	18.0	19.6	19.2	19.3	19.3	19.2	19.2	15.7
Burkina Faso	5.7	5.8	7.9	9.7	10.0	10.8	11.6	12.1	12.8	13.1	14.7	16.1	15.8	15.5	15.3	11.8
Burundi	13.1	12.5	11.1	11.7	12.7	17.3	20.8	22.6	24.6	22.3	21.0	19.5	20.8	22.2	23.8	18.4
Cameroon	8.0	7.7	7.0	6.7	7.3	7.7	8.2	8.4	8.9	8.9	9.0	9.1	8.9	8.7	8.5	8.2
Cote d'Ivoire	18.9	18.3	16.0	15.9	14.9	14.9	15.0	14.9	14.0	13.0	12.9	12.9	14.1	15.4	17.0	15.2
Ethiopia	8.7	13.5	16.4	19.1	21.6	23.3	22.9	18.9	19.2	16.5	18.5	18.1	17.5	16.9	16.4	17.8
Ghana	4.5	4.8	6.8	8.3	10.3	11.7	11.2	10.6	10.9	11.6	13.5	15.5				10.0
Kenya	21.5	19.6	21.9	23.4	24.9	25.6	24.1	23.5	23.1	23.2	23.6	23.9	22.4	21.0	19.4	22.7
Mauritius	44.4	42.7	44.5	50.0	54.9	54.2	55.1	56.7	62.9	69.2	72.3	71.7	71.6	71.5	71.5	59.5
Mozambique	9.4	8.3	9.8	11.3	13.0	15.4	12.5	11.5	11.5	9.8	9.6	12.0	12.8	13.9	15.2	11.7
Nigeria	9.2	8.4	9.7	11.8	12.5	10.4	14.9	12.6	12.0	11.3	12.1	12.1	17.3	24.5	35.0	14.3
Senegal	14.6	14.7	15.3	14.6	14.5	16.5	17.8	17.9	17.3	17.9	19.7	20.4	20.8	21.2	21.6	17.6
S/Africa	55.4	57.1	60.0	63.6	65.2	65.0	69.8	63.8	59.7	62.3	65.3	70.1	75.4	81.0	86.9	66.7
Tanzania	7.3	4.4	3.1	3.7	4.3	4.4	4.5	5.2	6.6	7.5	7.9	9.6	12.1	15.3	19.3	7.7
Uganda	3.7	4.4	4.5	4.6	5.2	5.2	5.0	5.0	5.3	5.5	5.4	5.9	7.4	9.3	11.9	5.9
Zimbabwe	22.0	19.7	22.4	22.4	18.4	16.4	11.7									
Developing Countries	22.3	22.3	23.8	25.3	25.7	25.2	25.6	25.7	25.4	25.7	27.5	30.4	32.5	32.5	32.5	
SSA Overall	12.1	11.7	12.1	13.0	13.5	13.9	14.0	14.1	14.4	14.6	15.5	16.1	16.6	25.4	27.2	
Europe and Central Asia	19.6	17.7	17.6	18.2	18.5	18.2	18.6	19.1	20.8	23.5	27.8	34.0	37.0	37.0	37.0	
East Asia and Pasific	34.4	35.4	38.7	40.6	37.1	34.5	34.5	34.2	34.6	34.9	36.1	40.3	42.5	42.5	42.5	
Middle East and North Africa	28.6	29.1	31.4	31.5	36.4	36.7	38.3	36.6	39.5	39.0	44.5	35.2	43.9	43.9	43.9	
South Asia	18.1	18.9	19.5	20.7	21.3	21.4	21.7	23.3	24.3	26.7	30.7	34.3	33.6	33.6	33.6	
Latin America and Carrbbean	29.9	31.2	33.7	36.4	38.5	37.9	38.4	37.9	34.6	33.4	33.4	37.7	40.1	40.1	40.1	
Canada	74.9	77.3	80.4	81.8	78.1	74.4	100.3	122.0	117.1	115.2	120.0	130.5	130.2	129.8	129.5	104.1
Cyprus	112.5	124.8	134.1	137.8	146.1	153.7	156.5	160.9	159.1	156.7	157.2	163.5	181.8	200.6	224.2	158.0
Denmark	30.0	30.2	30.7	32.8	34.1	83.6	137.3	142.7	148.0	152.2	161.7	175.3	191.8	208.4	228.2	119.1
France	85.3	83.5	81.0	0.0	0.0	81.2	85.0	85.6	85.9	87.7	89.7	93.2	99.3	106.4	114.6	78.6
Germany	98.3	102.9	107.7	112.2	114.6	115.5	116.9	116.7	115.5	112.6	110.9	108.3	105.1	101.7	98.0	109.1
Israel	45.7	46.8	55.6	62.0	66.3	82.3	93.2	100.2	116.4	140.9	197.4	269.8	0.0	0.0	0.0	85.1
India	21.8	21.7	22.4	22.6	23.4	26.6	27.8	29.9	30.8	32.4	36.4	39.8	43.4	47.8	52.6	32.0
Japan	180.5	179.8	185.5	197.3	200.6	195.3	154.3	110.4	104.0	98.9	98.4	98.6	96.8	94.9	93.2	139.2
New Zealand	86.0	92.0	98.1	105.5	106.6	108.6	107.1	109.4	110.9	114.7	123.7	133.6	140.1	148.2	157.9	116.2
United Kingdom	107.8	111.4	113.7	113.6	113.3	120.5	128.7	132.5	136.3	142.8	151.7	160.4	174.2	189.0	207.2	140.2
United States	45.8	46.5	46.7	47.4	47.8	49.0	51.5	51.9	52.4	53.6	55.8	58.0	60.4	62.8	65.5	53.0

Source: International Monetary Fund, World Economic Outlook Database

Table 2.5: Liquid Liabilities/GDP for Selected SSA Countries (1995 – 2011)

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	End-Period Average
Botswana	0.209	0.209	0.207	0.244	0.274	0.261	0.249	0.280	0.276	0.295	0.280	0.341	0.402	0.484	0.582	**0.306**
Burkina Faso	0.196	0.201	0.204	0.200	0.197	0.201	0.195	0.176	0.209	0.223	0.197	0.186	0.201	0.216	0.232	**0.202**
Burundi	0.214	0.209	0.181	0.160	0.162	0.200	0.215	0.238	0.276	0.278	0.305	0.321	0.360	0.411	0.476	**0.267**
Cameroon	0.144	0.126	0.121	0.123	0.127	0.139	0.154	0.165	0.170	0.167	0.168	0.172	0.181	0.191	0.201	**0.157**
Congo (Republic)	0.153	0.137			0.133	0.118	0.142	0.129	0.140	0.134	0.128	0.141	0.185	0.247	0.328	**0.163**
Cote d'Ivoire	0.274	0.265	0.229	0.225	0.222	0.223	0.224	0.264	0.257	0.215	0.221	0.231	0.258	0.294	0.336	**0.249**
Ethiopia	0.415	0.387	0.383	0.426	0.435	0.458	0.477	0.437	0.493	0.446	0.471	0.401				**0.436**
Ghana	0.135	0.137	0.171	0.182	0.184	0.193	0.181	0.213	0.222	0.223	0.232	0.240	0.256	0.282	0.293	**0.210**
Kenya	0.482	0.380	0.394	0.390	0.384	0.375	0.364	0.378	0.395	0.390	0.381	0.391	0.371	0.351	0.331	**0.384**
Madagascar	0.205	0.202	0.222	0.234	0.236	0.248	0.230	0.248	0.222	0.218	0.198	0.192	0.205	0.219	0.234	**0.221**
Malawi	0.176	0.160	0.150	0.153	0.174	0.184	0.204	0.212	0.222	0.237	0.251	0.171	0.191	0.215	0.242	**0.196**
Mali	0.187	0.207	0.212	0.209	0.200	0.202	0.203	0.229	0.270	0.266	0.259	0.262	0.265	0.269	0.274	**0.234**
Mauritius	0.719	0.717	0.727	0.727	0.759	0.758	0.762	0.798	0.846	0.914	0.978	0.965	0.948	0.932	0.915	**0.831**
Mozambique	0.230	0.179	0.173	0.177	0.197	0.243	0.221	0.240	0.273	0.262	0.247	0.271	0.290	0.311	0.333	**0.243**
Niger	0.141	0.128	0.105	0.075	0.069	0.084	0.094	0.090	0.109	0.121	0.134	0.137	0.150	0.164	0.179	**0.119**
Nigeria	0.160	0.129	0.139	0.167	0.188	0.175	0.251	0.210	0.204	0.179	0.174	0.173	0.205	0.241	0.288	**0.192**
Senegal	0.200	0.203	0.208	0.204	0.212	0.225	0.236	0.250	0.265	0.297	0.311	0.314	0.331	0.347	0.364	**0.264**
Sierra Leone	0.094	0.092	0.113	0.124	0.158	0.153	0.160	0.166	0.181	0.178	0.190	0.189	0.196	0.203	0.210	**0.160**
S/Africa	0.470	0.476	0.502	0.533	0.544	0.527	0.483	0.425	0.419	0.405	0.414	0.430	0.441	0.451	0.461	**0.465**
Tanzania	0.227	0.220	0.196	0.184	0.180	0.186	0.190	0.200	0.215	0.211	0.219	0.247	0.265	0.286	0.307	**0.222**
Uganda	0.103	0.109	0.117	0.126	0.137	0.142	0.153	0.167	0.177	0.177	0.179	0.183	0.203	0.228	0.258	**0.164**
Zambia	0.139	0.156	0.153	0.164	0.169	0.190	0.193	0.184	0.184	0.187	0.178	0.176	0.208	0.243	0.286	**0.187**
Zimbabwe	0.404	0.390	0.438	0.371	0.288	0.285	0.227									**0.343**
SSA Sample Period Average	**0.247**	**0.236**	**0.243**	**0.245**	**0.245**	**0.251**	**0.253**	**0.259**	**0.274**	**0.274**	**0.278**	**0.279**	**0.291**	**0.314**	**0.339**	
SSA	0.244	0.239	0.243	0.247	0.246	0.255	0.265	0.276	0.285	0.292	0.309	0.326	0.297			
Developing Countries	0.345	0.342	0.357	0.370	0.376	0.379	0.399	0.417	0.415	0.420	0.432	0.468	0.468			
East Asia and Pacific	0.437	0.439	0.460	0.476	0.480	0.490	0.510	0.513	0.518	0.521	0.496	0.542	0.582			
Latin America and Carrbbean	0.401	0.417	0.442	0.486	0.484	0.470	0.495	0.515	0.494	0.487	0.492	0.553	0.541			
Middle East and North Africa	0.567	0.543	0.553	0.549	0.588	0.591	0.634	0.645	0.647	0.643	0.705	0.623	0.715			
South Asia	0.363	0.359	0.362	0.388	0.399	0.406	0.426	0.468	0.477	0.499	0.517	0.534	0.551			

Source: International Monetary Fund, World Economic Outlook Database

Table 2.6: Interest Rate Spread for Selected SSA Countries from 1995-2011

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2007	2008	2009	2010	2011	End-Period Average
Burkina Faso	9.3	9.5	9.6	9.8	9.9	10.0	10.2	10.3	10.5	10.6	11.0	11.2	11.3	11.5	11.6	**10.4**
Cameroon	10.5	16.6	17.0	17.0	17.0	17.0	15.7	13.0	13.0	13.0	10.8	10.2	9.5	8.9	8.2	**13.1**
Cote d'Ivoire	9.6	9.8	10.0	10.1	10.3	10.5	10.6	10.8	11.0	11.1	11.6	11.8	12.0	12.1	12.3	**10.9**
Ethiopia	3.6	4.5	3.5	4.5	4.6	4.9	4.9	4.9	3.6	3.6	3.4	3.3	3.3	3.2	3.1	**3.9**
Ghana	31.0	34.0	37.1	40.1	43.2	46.2	49.2	52.3	55.3	58.4	67.5	70.5	73.6	76.6	79.7	**54.3**
Kenya	15.2	16.2	13.5	11.1	12.8	14.2	13.0	13.0	12.4	10.1	8.2	8.7	8.8	9.8	9.1	**11.7**
Madagascar	19.0	13.8	15.6	19.0	12.7	11.5	13.3	13.3	12.8	10.3	28.5	33.5	33.5	38.5	42.6	**21.2**
Mozambique	117.5	122.2	126.9	16.1	11.8	9.3	7.7	8.7	12.5	12.2	7.7	7.3	6.2	6.6		**33.8**
Nigeria	6.7	6.8	10.6	8.1	7.5	9.6	8.2	8.1	6.5	5.5	6.7	3.5	5.1	11.1		**7.4**
Senegal	10.1	10.4	10.7	10.9	11.2	11.5	11.8	12.0	12.3	12.6	13.4	13.7	13.9	14.2	14.5	**12.2**
S/Africa	4.4	4.6	4.6	5.3	5.8	5.3	4.4	5.0	5.2	4.7	4.0	3.5	3.2	3.4		**4.5**
Tanzania	18.2	20.4	18.4	15.1	14.1	14.2	15.2	13.1	11.5	9.9	7.4	6.7	7.1	8.0	8.9	**12.6**
Uganda	12.6	9.7	9.5	9.5	12.8	13.1	14.2	13.5	9.1	12.9	9.8	9.8	11.2	12.5	13.9	**11.6**
Zimbabwe	8.8	12.7	13.9	13.0	16.9	18.0	24.1	18.1	61.4	175.7	328.5	391.8	455.2	518.5	581.8	**175.9**
SSA Sample Period	**19.8**	**20.8**	**21.5**	**13.6**	**13.6**	**14.0**	**14.5**	**14.0**	**16.9**	**25.0**	**37.0**	**41.8**	**46.7**	**52.5**	**71.4**	

Source: International Monetary Fund, World Economic Outlook Database, various years.

2.5 Macroeconomic Performance of Selected SSA Countries

Economic growth in Africa, SSA inclusive, remains sub-optimal and has been described as a tragedy by some macroeconomic commentators (see for example, Easterly and Levine, 1997). This posture may have been accentuated by low credit to the private sector, poor institutional quality, and political risks, in addition to frequent incidence of capital flight or flight to safety of foreign capital. Although SSA often experience positive annual GDP growth especially since the mid-1990s, output structures have remained broadly unchanged, being dominated by crude materials production, namely agriculture and mining (see Mlachila, et al., 2013; and computation in *Table 2.7*). The contribution of transformation activities, like manufacturing remain weak and generally falling (World Development Indicators, 2005). In line, Ajakaiye, (2005) attributed this outcome of little or no structural change in output of SSA countries to technological backwardness and dysfunctional institutions.

Furthermore, *Figure 2.5* is a comparative analysis GDP growth and financial depth, measured by M2/GDP, in selected SSA countries from 1995 to 2011. The graph does not provide clear pattern that countries with broader financial depth will necessarily have higher level of economic growth. For example, some countries like Cote d'Ivoire, Kenya, Senegal and South Africa, have wider financial depth but with a comparatively low GDP growth, while Burkina Faso, Ghana, Madagascar and Uganda have faster rate of GDP growth associated with a moderate growth in financial depth during the period. Only Zimbabwe recorded a negative average GDP growth, despite a relatively high average ratio of M2/GDP at 32.7% from 1990 to 2011. From both *Table 2.7* and *Figure 2.5*, a positive relationship can however, be inferred between financial depth and economic growth.

Table 2.7: Economic Growth in SSA (GDP Growth Rate)

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2007	2008	2009	2010	2011	End-Period Average
Burkina Faso	5.7	11.0	6.3	7.3	7.4	1.8	6.6	4.7	8.0	4.6	3.6	5.8	3.0	7.9	4.2	5.9
Cameroon	3.3	5.0	5.1	5.0	4.4	4.2	4.5	4.0	4.0	3.7	3.5	2.9	2.0	3.2	3.8	3.9
Cote d'Ivoire	7.1	7.7	5.7	4.8	1.6	-3.7	0.0	-1.4	-1.6	1.8	1.7	2.3	3.8	2.4	-4.7	1.8
Ethiopia	6.1	12.4	3.1	-3.5	5.2	6.1	8.3	1.5	-2.2	13.6	11.5	10.8	8.8	9.9	7.3	6.6
Ghana	4.1	4.6	4.2	4.7	4.4	3.7	4.0	4.5	5.2	5.6	6.5	8.4	4.0	8.0	14.4	5.8
Kenya	4.4	4.1	0.5	3.3	2.3	0.6	3.8	0.5	2.9	5.1	7.0	1.5	2.6	5.6	4.5	3.3
Madagascar	3.2	3.3	3.4	3.5	3.7	3.9	4.1	3.6	3.9	4.2	4.8	5.2	5.0	5.0	5.1	4.1
Mozambique	2.7	7.4	10.2	10.8	8.1	1.1	11.9	8.8	6.0	7.9	7.3	6.8	6.3	6.8	7.1	7.3
Nigeria	2.5	4.3	2.7	1.9	1.1	5.4	3.1	1.5	10.3	10.6	6.4	6.0	7.0	7.8	6.7	5.2
Senegal	5.4	2.0	3.1	5.9	6.3	3.2	4.6	0.7	6.7	5.9	4.9	3.7	2.1	4.1	2.6	4.1
S/Africa	3.1	4.3	2.6	0.5	2.4	4.2	2.7	3.7	2.9	4.6	5.5	3.6	-1.5	2.9	3.1	3.0
Tanzania	3.6	4.5	3.5	3.7	4.8	4.9	6.0	7.2	6.9	7.8	7.1	7.4	6.0	7.0	6.3	5.8
Uganda	11.5	9.1	5.1	4.9	8.1	3.1	5.2	8.7	6.5	6.8	8.4	8.7	7.2	5.9	6.7	7.1
Zimbabwe	0.2	10.4	2.7	2.9	-0.8	-3.1	1.4	-8.9	-17.0	-5.8	-3.7	-17.7	6.0	9.0	9.3	-1.0
SSA Average Growth	4.5	6.4	4.2	4.0	4.2	2.5	4.7	2.8	3.1	5.5	5.3	4.0	4.4	6.1	5.5	

Source: Author, IMF and World EconomicOutlook Database.

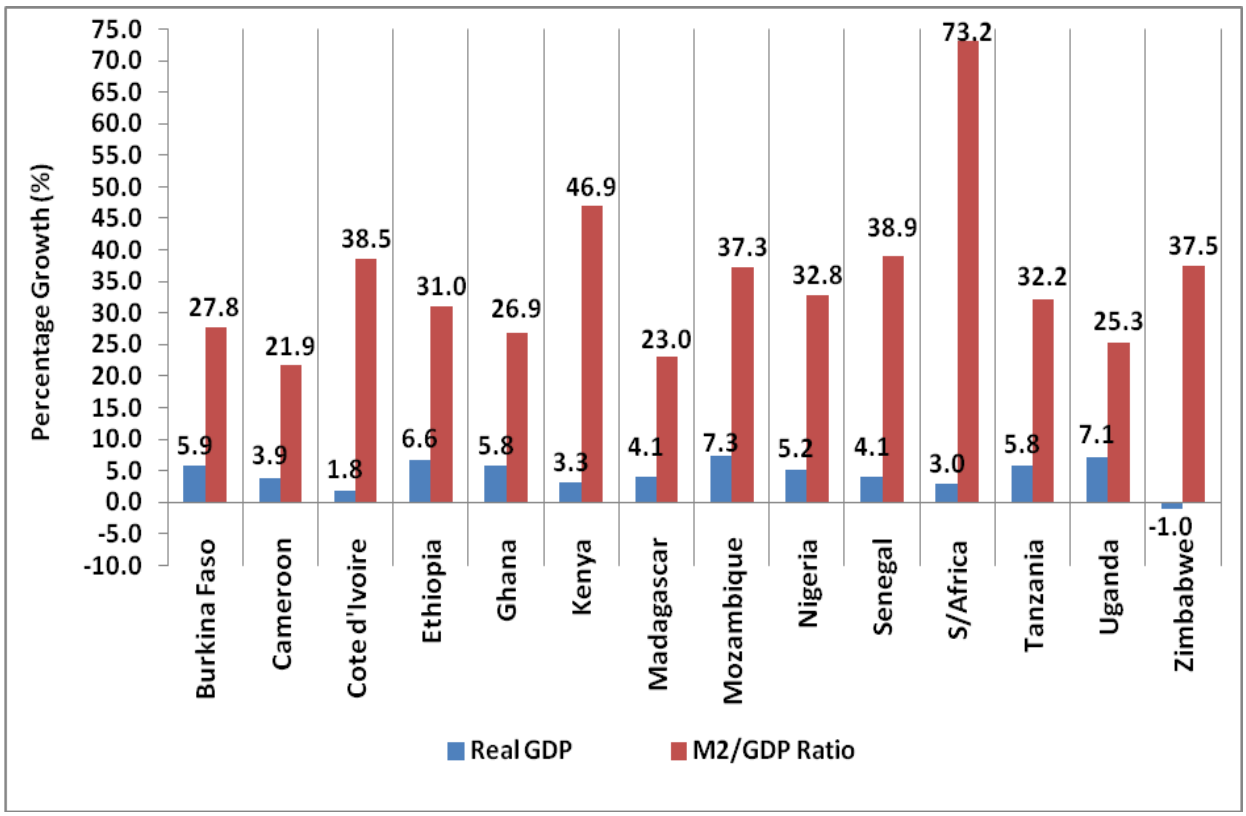


Figure 2.5: Comparative Statics: GDP growth and Financial Depth, 1990 – 2011
Source: Author, but underlying data from the WDI (2013)

Gross capital formation (as a percentage of GDP) remains broadly low in most SSA countries, although clearly higher in 9 out of the 14 sampled countries that undertook varied forms of structural and institutional reforms (*see Table 2.8).* Allen, et. al., (2010) attributed the low performance of capital formation in Africa to the fact that almost 84% (74%) of small and medium-scale enterprises in Africa (other developing countries) do not have access to credit facilities offered by formal financial institutions. Monetary regulators in African countries often request banks to keep high liquidity and cash reserve requirement, thereby limiting credit availability. This will mean that interest rates may be forced to remain high, as banks ultimately tend to transfer economic cost of each fund to the final customers (Ahmed and Islam, 2010). In this case, high liquidity requirement is viewed as an implicit financial tax leading to high interest rate. A higher real interest rate raises the cost of credit in formal banking system which could lead to a rise in demand for informal (curb) market loans, thereby adversely affecting investment, employment and income.

Another, macroeconomic indicator of interest is the poverty headcount (% of population), presented in *Table 2.8*. There is coexistence of high level of poverty, amid rising ratio of natural resource share in gross domestic product[10] (GDP) in many African countries. Despite the high number of resource-rich SSA countries, the 2013 *Millennium Development Goals Report* states inter alia: In SSA, almost half the population live on less than $1.25 a day. SSA is the only region that saw the number of people living in extreme poverty rise steadily, from 290 million in 1990 to 414 million in 2010, accounting for more than a third of people worldwide who are considered as destitute. The World Bank projects that, by end-2015, about 970 million people will still be living on less than $1.25 a day in countries classified as low- or middle-income in 1990. The report further holds that SSA and Southern Asia will each be home to about 40 percent of the developing world population living in extreme poverty by end-2015.

Savings constraint is a key impediment to financial market deepening, development of domestic bond markets, investment, and overall economic development (Adelegan and Radzewick-Bak, 2009). Low national savings lead to low level of financial intermediation by domestic banking system. A key assertion in development

[10] In 2011, about 60% of African countries' export earnings came from commodities export; underlying data from IMF WEO (2012): http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/c4.pdf.

economics is that the poor and middle-income groups, not the rich, save and invest significantly larger proportion of their incomes in real economic sense of productive domestic savings and investment (See Perkins, Radelet and Lindauer, 2006; Todaro and Smith, 2011). From the table, gross savings as a share of GDP rose for most SSA countries over their respective figures in the early 1980s, with the exception of Kenya and South Africa where a decrease was recorded.

In addition, the vast number of the population below the poverty-line in most SSA countries suggest per capita income will be low, which adversely affect financial intermediation in the continent. In this case, low savings level in SSA is both a cause and outcome of low financial depth and human development. The schema on human development in *Appendix 1(g)* shows the low scope of human development in SSA, as the continent ranks lowest, compared to other global regions. This fact further amplifies the International Labour Organisation (ILO) declaration of Philadelphia in 1944 that poverty anywhere remains a threat to prosperity everywhere. Numerous studies have linked poor access of households to credit in Africa as the reason for the existence of low growth and poverty in the continent (see Galor and Zeira, 1993; Claessens, 2005; Demirguc-Kunt and Maksimovic, 2005).

Table 2.8: Some Key Macroeconomic Indicators for Selected SSA Countries

Country	*GCF (% of GDP)*				*Poverty head count (% of population)*				*Total natural resources rents (% of GDP)*				*Gross savings (% of GDP)*			
	1980	*1990*	*2000*	*2011*	*1980*	*1990*	*2000*	*2010*	*1980*	*1990*	*2000*	*2011*	*1980*	*1990*	*2000*	*2011*
Burkina Faso	15.1	18.9	16.8	18.1	40.7	40.7	45.3	46.7	4.0	3.5	3.3	11.8	9.3	15.9	5.1	22.9
Cameroun	21.0	17.8	16.7	17.7	52.7	52.7	53.3	39.9	15.9	11.3	12.7	9.8	5.2	16.2	16.1	16.2
Cote D' Ivoire	26.5	6.7	10.8	13.9	9.8	10.1	36.4	42.7	3.2	3.0	4.5	7.7	8.6	-5.1	8.0	N/A
Ethiopia	N/A	12.9	20.3	21.5	42.9	42.9	44.2	38.9	N/A	6.5	10.1	6.0	N/A	12.8	18.7	29.7
Ghana	5.6	14.4	24.0	22.4	51.7	51.7	39.5	28.5	6.3	4.4	5.4	14.3	6.3	10.5	15.3	27.4
Kenya	24.5	24.2	17.4	21.3	41.9	41.9	52.3	45.9	1.8	3.6	1.9	1.4	17.2	18.6	13.5	12.2
Madagascar	15.0	17.0	15.0	32.6	67.8	67.8	71.3	68.7	1.1	4.5	2.2	5.7	-0.7	9.1	8.8	N/A
Mozambique	7.6	22.1	31.0	23.7	67.4	67.4	69.4	54.7	3.4	8.6	4.5	7.2	-6.6	6.2	10.4	11.9
Nigeria	16.5	13.8	20.2	22.1	41.5	43.0	64.6	54.7	42.0	47.5	46.9	35.8	16.6	23.0	29.4	26.3
Senegal	16.6	9.1	20.5	28.9	65.5	65.5	67.9	50.8	2.2	1.5	1.9	3.4	2.7	1.6	13.8	18.5
S/Africa	29.9	17.7	15.9	25.0	29.0	29.0	38.0	23.0	13.8	6.3	2.2	10.6	33.9	19.1	15.8	16.1
Tanzania	26.5	26.1	16.8	30.6	37.4	37.4	35.6	33.4	N/A	8.1	2.7	8.4	9.3	10.1	13.2	20.2
Uganda	6.2	12.7	19.5	23.7	53.2	53.2	33.8	24.5	19.2	9.7	6.7	5.4	1.9	5.6	14.4	15.4
Zimbabwe	16.9	17.4	13.6	0.5	33.7	33.7	42.0	72.0	4.4	3.2	2.4	6.9	12.0	15.6	N/A	N/A

Source: International Monetary Fund, World Development Indicators.

2.6 Stock Market Performance Metrics in SSA

As part of the reform programme, developing the stock market was conceived as a veritable channel to reducing the reliance on banking system for long-term funding. Despite several years that the stock market has been established in the continent, the number of listed companies (a measure of size) declined from over 1000 in 1990 to about 900 by 2010, while in the case of East Asia, the number increased from 774 in 1990 to 3,582. Although market capitalisation, rose from about $143 billion in 1990 to $294 billion by end-2010 (see Ajakaiye, 2005). SSA stock market performance could be considered unimpressive when compared to the growth in East Asian stock market, which rose from about $87 billion in 1990 to over $1 trillion by end-2010.

Several authors have noted that SSA stock market is still characterised by illiquidity and shallow depth, with the exception of South Africa. (see Ndikumana, 2000; Senbet and Otchere, 2005; Allen, et. al., 2010). For South Africa in 2012, stock market performance metrics namely, market capitalisation (as a percentage of GDP) and total value of stocks traded (as a percentage of GDP), outperformed global averages of 76.2% and 71.9%, respectively (see *Table 2.9*). This suggests the relative liquidity of the South African stock exchange. While the number of listed companies is relatively high in Nigeria, other stock market performance metrics for the country continue to underperform on average in line with other SSA countries. Except for South Africa, it can be seen that stock market performance in SSA remains unimpressive across all metrics when compared to other global regions. This has dire implications on availability of funds for investment, and hence, economic development.

A closer look at *Table 2.9* could provide a useful insight to effects of the 2008 global financial crisis across major economic regions. Market capitalisation (as a percentage of GDP) fell by 61.8% in SSA region, 24.4% in East Asia, 14% in Euro Area and only 4.5% in OECD countries. The average global decline in market capitalisation stood at 11.2% of GDP. The drastic fall in market capitalisation across most SSA countries clearly indicate the nature of foreign investments in the market that are mainly portfolio investments. These sets of investments, unlike other forms of direct investments, can easily be reduced or completely liquidated during periods of economic uncertainties in the host country like the aftermath of the 2008 global meltdown.

Table 2.9: Comparative Statics of Stock Market Performance Metrics

Country/ Region	Listed domestic		Market capitalization		Stocks traded, total		Stocks traded,	
	2005-2011	2012	2005-2011	2012	2005-2011	2012	2005-2011	2012
Cote d'Ivoire	38	37	28	32	1	1	2	2
Ghana	34	34	12	9	0	0	3	2
Kenya	53	57	40	36	4	2	10	8
Nigeria	209	192	25	21	4	2	16	9
South Africa	381	348	218	159	115	81	54	55
Tanzania	11	17	5	6	0	0	2	2
Uganda	7	10	17	37	0	0	2	0
Zimbabwe	78	76	162	121	13	16	12	14
Countries' Average	***101***	***96***	***63***	***53***	***17***	***13***	***13***	***11***
Botswana	20	24	35	32	1	1	3	3
Egypt, Arab Rep.	415	234	63	22	30	8	49	38
Zambia	17	20	18	15	0	1	3	6
Brazil	395	353	64	55	36	37	60	68
India	4,917	5,191	84	69	68	34	87	55
Japan	3,501	3,470	83	62	108	60	128	100
East Asia & Pacific (developing only)	4,430	5,311	79	52	101	62	134	128
Euro area	6,519	6,082	59	52	74	41	124	84
OECD members	27,456	26,590	91	85	154	82	173	102
Sub-Saharan Africa (developing only)	941	923	111	84	48	37	49	47
World	49,887	47,520	88	76	135	72	157	100

Source: Author, but underlying data obtained from the World Bank's World Development Indicators

CHAPTER THREE

REVIEW OF RELATED LITERATURE

3.1 Conceptual Issues

a. Financial Sector Reform

Financial reform is an integral part of economic adjustment and stabilisation programme. It refers to two different, but complementary types of changes in the financial system geared towards improving how the sector allocates resources. First, financial sector reform is abolishing directed credit programmes, removal of interest rate ceilings and reduction in reserve requirements to let the free market determine the allocation of credit, rather than the government. To Todaro and Smith, (2011), financial liberalisation[11] involves eliminating various forms of government intervention in the financial markets, thus allowing the effective use of the market (supply and demand) to determine the equilibrium level of interest rates.

Secondly, financial reform involves the critical attention to prudential regulation and supervision of the financial system to enhance its soundness and safety by removing the incentives for the private sectors of the economy to engage in risky investment behaviours, rather foster overall societal interest. The process of financial liberalisation leads to the adjustment in real interest rate to its equilibrium level, elimination of low yielding investment projects, so that the overall efficiency of investment is enhanced.

Hussain, Mohammed and Kamier, (2002) pointed out that the theory of financial liberalization is based crucially on three postulates concerning the relationship between the real interest rate, saving and investment. These include that (1) saving is positively related to the real rate of interest; (2) investment is determined by prior saving; and (3) the effect of the real interest rate on investment will depend on whether the real interest rate is below or above the equilibrium rate. Although the financial liberalization theory places more emphasis on the desirable effects of raising

[11] We used the term 'financial sector reform' and 'financial liberalisation' interchangeably in this study. While the latter is often associated with decontrol of interest rate and credit allocation, financial reform covers broader dimensions of the financial system, including granting central banks more autonomy to conduct monetary policy, restructuring banks to restore solvency, improving financial infrastructure, especially bank supervision, as well as policies aimed at promoting openness of current and capital accounts.

the real interest rate towards equilibrium, they also postulates that the impact of the changes in the real interest rate on investment depends on whether the actual interest rate is below or above equilibrium. Below the equilibrium interest rate, investment is constrained by saving, while an increase in the real interest rate towards equilibrium, will increase saving and investment. Hence, as long as the equilibrium interest rate is not reached, investment is positively related to the real interest rate (see Hussain, Mohammed and Kamier, 2002). Beyond this equilibrium, an increase in real interest rate will have a negative effect on investment.

Chandrasekhar, (2004) identified two approaches of financial liberalisation based on measures adopted. These include internal and external financial liberalisation. Internal financial liberalisation includes removal of interest rates and credit controls, as well as entry barriers of new banks; privatisation of state-owned banks; and reduction of controls over traded instruments by financial intermediaries. External financial liberalisation involves the liberalisation of capital account, which mainly involves changing extant exchange rate regime. Under this form of liberalisation, foreign investors can invest in domestic financial instruments, either in debts or equities, while domestic investors, in turn can undertake cross-border commercial borrowing without government guarantee.

Furthermore, a study by IMF, (2008) pointed out that the ideal sequence of events is for domestic financial sector to be liberalized first before embarking on external (capital) account openness. This is because regulated interest rates, amidst other financial system distortions, will destabilise capital mobility. McKinnon, (1973) hinted that capital inflows could lead to over-borrowing in foreign currency, which a dysfunctional domestic financial sector would misallocate, while capital outflows would likely erode the domestic deposit base. There are some evidences that capital account liberalization may increase volatility and crisis risk in the absence of a sufficiently liberalised domestic financial sector (IMF, 2007). Such volatility could lead to inefficient allocation of resources, which may adversely affect economic growth trajectory. In sum, the study conducted by IMF in 2007 revealed that economic growth is higher, on average, when the domestic financial system is liberalised before engaging in capital account openness, than when the reverse strategy is adopted. On the back of the foregoing assertions, the focus of this study

will be to access the impact of domestic financial reforms on selected broad-based macroeconomic performance indicators.

However, empirical findings by IMF, (2008) suggests that trade should be liberalized before the domestic financial sector. Most countries in SSA did open their economies to international trade, as part of the structural reforms which included the liberalisation of financial sector. Rajan and Zingales, (2003), for example, argued that opening the economy to international trade may quicken the pace of reform of the domestic financial sector, as greater competition in product markets (through trade) would likely weaken the influence of monopolistic incumbents who may oppose financial development. In ending, financial sector reform may be an important strategy to raise the size of domestic savings channelled through the formal financial system, improves efficiency of financial intermediation, as well as directly or indirectly enhance the resilience of the macroeconomic environment.

b. Financial Sector Development

According to Demirgüç-Kunt and Levine, (2008), financial development occurs when financial instruments, markets, and intermediaries ameliorate (though do not necessarily eliminate) the effects of information, limited enforcement, and transactions costs. Thus, Levine, (1997) opined that financial development involves improvements along five (5) financial functions, namely (i) production of ex-ante information about possible investments, (ii) monitoring of investments and implementation of corporate governance, (iii) trading, diversification, and management of risk (iv) mobilizing and pooling of savings, and (v) exchange of goods and services. The authors believe that since many market frictions exist and that policies differ across economies, improvements along any single dimension may have different implications for resource allocation and welfare depending on the strength of other distortions still at play in the economy.

A core importance of financial intermediation is a closer match between savers and investors. The process of financial intermediation is believed to also help absorb exogenous shocks in the real sector. Acemoglu and Zilibotti, (1997); and Ramcharan, (2008) hinted that financial deepening could promote economic diversification, which

in turn may help reduce cyclical risk, and thus dampen cyclical fluctuations. In addition, Greenwald and Stiglitz, (1993) held that efficiency in financial market mitigates information asymmetries, and as such enables economic agents to process information more effectively that in turn lowers growth volatility Aghion, Banerjee and Piketty, (1999) confirm the existence of linkages between financial development and growth volatility, especially in developing countries.

Numerous empirical studies have linked financial development to the attainment of broad-based macroeconomic performance in both developed and emerging economies using approaches ranging from time series, cross sectional and panel data estimation methods. See for example, studies by King and Levine (1993b); Rajan and Zingales, (1998); Odedokun (1996); Beck et al. (2000); Allen and Ndikumana, (2000); Ndikumana, (2000); Acaravci, et al., (2007); Ahmad and Malik, (2009); Ahmed, (2010). Although, many others support the opposite view that financial development may have negative impact on economic growth (Ram, 1999 and De Gregorio and Guidotti, 1995, amongst others). A major difficulty encountered by many researchers stem from finding a suitable measure[12] of financial development. However, indicators used to capture financial development from extant studies can be broadly categorised into three groups namely, use of monetary aggregates, stock market indicators, as well as measures reflecting the structural and institutional aspects of financial sector.

Monetary aggregates are often referred to as the 'traditional measures' and are widely published in both national and international databases. These include conventional measures of money – namely, narrow (M1), broad (M2) and quasi-liquid liabilities (M3) as a ratio of GDP; credit supply by banks to the private sector; and banks' credit as a ratio of total domestic credit. Stock market measures include indicators to capture size of the stock market/ liquidity and these measures include the number of listed companies, ratio of market capitalisation to GDP; value of shares traded and turnover ratio. Lastly, structural and institutional measures include indicators that reflect bank-ownership structure, degree of concentration in the banking sector, the ratio of state-owned and private-sector owned banks, range of financial products in the market, as well as the degree of sophistication of monetary policy instruments.

[12] See studies by Demirgüç-Kunt and Levine, (1999); and Levine, Loayza, and Beck, (2000) for discussions on problems relating to finding a suitable measure to capture financial development.

c. Economic performance

The goal of macroeconomic policy is the achievement of output stabilisation in the short run and a diversified self-sustaining economic growth and development in the long run (Iyoha, 2004). The other goals include attainment of price stability, equitable distribution of income, full-employment and equilibrium in balance of payment. Economic activity is often geared to enhance human welfare, and therefore, any meaningful indicator of performance must consciously acknowledge these goals. For this study, economic performance indicators considered include real per capita GDP, gross capital formation as a percentage of GDP, human development and macroeconomic (misery) instability.

GDP is the most common indicator of economic performance since it measures the total market value of all finished goods and services produced in the monetized segment of the economy. A country with high national output (GDP) is considered wealthy, advanced and growing, amongst other countries with low or sometimes negative GDP growth rate. However, Jacobs and Šlaus, (2010) argued that GDP per capita often used as a measure of national productivity[13], does not really account for personal consumption or the economic welfare of each household. This is because the calculation of GDP includes categories of expenditure such as military spending and general administration that are not directly related to households' income, expenditure and consumption.

Consequently, there are growing interests in finding other indicators to capture the rate of economic performance of countries, especially measures which take into consideration factors that contribute to social progress. One of such is the human development index, (HDI) conceived as measure of how well a country has performed, not only in terms of real income growth, but also in terms of social indicators of people's ability to lead a long and healthy life, to acquire knowledge and skills, and to have access to resources needed to afford a decent standard of living. Thus, HDI looks at three outcomes of development: state of health, level of knowledge and skill, and the level of real income. It is in this regard that some

[13] Stiglitz, Sen and Fitossi, (2008) argued that using the size of GDP only to measure economic performance may overly exaggerate actual economic situation, more so that economic structure of most global economies is rapidly changing.

economists considered HDI statistic as a broader measure of economic performance than GDP. HDI value ranges from 0 to 1 and score close to 0 or 1, shows low or high levels of human development, respectively. Studies have shown that limited access to finance lowers growth, welfare and hinders poverty reduction (see Galor and Zeira, 1993; Claessens, 2005; Demirguc-Kunt and Maksimovic, 2005).

In addition, commercial activities often generate certain levels of macroeconomic uncertainties, especially in the presence of weak institutions and ineffective regulatory environment. The problem of high inflation, fiscal deficit and unemployment rate, for example, remain the central macroeconomic challenge facing developing economies, SSA inclusive. Again, these economic malaises distort economic growth trajectory of countries (see Ndulu, et al., 2000; Oyejide, 2000; Iyoha and Oriakhi, 2002; Gulde, Pattillo and Christensen, 2006). Thus, a measure like the misery index, is considered appropriate to measure level of macroeconomic hardship and instability in any particular country. This study used the misery index to capture macroeconomic instability, and the index was computed by a simple summation of three key indicators known to cause broad-based macroeconomic hardship in developing economies with peculiar structural bottlenecks. These three (3) variables include inflation, fiscal deficit and unemployment. The essence of this study therefore is to understand whether financial sector reforms fuel or douse the occurrence of macroeconomic instability in sub-Saharan Africa.

3.2 The Financial Repression and Financial Liberalisation Debate

Financial repression refers to the notion that a set of government regulations, laws, and other non-market restrictions prevent the financial intermediaries of an economy from functioning at their full capacity (Mckinnon, 1973; Shaw, 1973). Interest rate ceilings, liquidity ratio requirements, high bank reserve requirements, capital controls, restrictions on market entry into the financial sector, restrictions on direction of credit allocation, and government ownership of banks are some of the policies which causes financial repression (Berthelemy and Varoudekis, 1996; Abiad, et. al., 2010). These practices are common in most developing countries and are often imposed by governments to achieve some economic ends. However, these policies inevitably distorted the equilibrium interest rate structure which prevails under a competitive financial system. In consequence, real interest rate on deposit and lending becomes

low and negative in some cases (Kitchen, 1986) which leads to withdrawal of funds from the formal banking system. This outcome lowers credit availability to investors, with overriding negative effects on achieving sustainable economic performance (see Hussain, Mohammed and Kamier, 2002).

From the mid-1980s to the 1990s, global financial bodies like the IMF and the World Bank recommended far-reaching structural reform policies for developing economies to move from a repressed financial system that is less competitive in favour of a full-fledged financial sector liberalisation. The implementations of these reforms were the first attempt at liberalising the financial sector during those periods in the African continent.

Proponents of the financial liberalisation school, holds that policy to maintain a positive real interest rate would encourage savings mobilisation, thereby increasing the pool of credit that supports long-run investment and economic development. The main argument of the school is that government borrowings, and consequently debt, would be higher under a repressed financial system due to prevalence of low, or even negative real interest rate. High level of domestic debt accumulated by government would mean less credit would be available in the formal banking system for private sector borrowing, and as such available funds would attract higher interest rate that may be too high for the private sector of the economy. This may eventually crowd-out private sector from the credit market, with attendant effect on investment.

Meanwhile, Sauve, (1999) listed opportunity for technology spill-over and increases in investment as possible benefits of liberalising the financial sector in developing countries. However, the Neo-Structuralists theory of finance and growth, loosely called the Keynes-Tobin-Stiglitz hypothesis, provides theoretical evidence that some repressive policies, like directed credit scheme and the low real interest rate, could support investment and hence, help to stimulate economic activities. Some economists are increasingly paying attention to the possibilities that financial sector reform would lead to undesired outcome, like financial crisis and economic uncertainties (see Kose, Prasad and Terrones, 2003; Prasad, Rogoff, Wei and Kose, 2004; Kose, Prasad, Rogoff, and Wei, 2006).

3.3. Theoretical Literature

3.3.1. Financial Reform, Financial Development and Economic Growth Nexus

The origin of the finance-growth debate can be traced to Bagehot, (1873). His concern was finding what role the capital market played in the industrial revolution of the 1800. Another important contribution to the finance-growth literature is documented in Schumpeter, (1911). However, the concept was more fully developed by independent studies of McKinnon, (1973) and Shaw, (1973), who argued that financial intermediaries improve economic development by shifting capital to entrepreneurs, mobilizing savings, facilitating transactions and managing risks. The duo shows that countries with high economic growth also have developed financial markets because higher levels of income may result in increases in savings and also improve efficiency of investments. According to McKinnon-Shaw hypothesis, financial repression arises when a country imposes ceilings on nominal deposit and lending interest rates relative to inflation. The resulting low or negative real interest rate discourages savings mobilisation. Thus, the main theme of financial liberalisation advocated by McKinnon and Shaw is that the strategy to raise real interest rate to positive whole number in an economy will lead, on average, to improvements in propensity to save, and ultimately stimulate both investment and economic growth.

Contrary to the neo-classical assumption proposed by McKinnon and Shaw in their analysis, the Structuralists School - Tobin, (1965); Taylor, (1979); Kohsaka, (1984); and more recently, Aryeetey, (2003) consider the influence of non-institutional finance, like money lenders and indigenous banking, ignored in the McKinnon and Shaw frameworks. The Structuralists recognised the existence of informal financial markets in emerging economies, and they believe that the presence of structural bottlenecks impair the functioning of financial systems in developing countries. They argued that high interest rate raises costs of funds, results in short-run inflation spiral, and lowers investment. The immediate implication of this is a reduction in the rate of economic growth. In essence, the main contention of this school is that SSA countries could be better-off with financial repression until their economies reach a stage of appreciable growth and development before financial liberalisation can be fully entrenched to advantage.

Another school, loosely referred to as, the Imperfect Asymmetric Information School often associated with Jaffee and Russell, (1976); Keeton, (1979) and Stiglitz and Weiss, (1981). They examines the problem of financial development under asymmetry information and costly credit that results in credit rationing that could eventually lead to market failure. They believe that government intervention is only desirable when it removes asymmetry information and transaction costs. The study concluded that in the presence of asymmetry information the effects of finance on economic growth would produce mixed outcomes across economies, even among countries with comparable structural features.

Finance also plays a prominent role in the endogenous growth theory, through its positive impact on the levels of capital accumulation and savings (Romer, 1986 and 1989) or of technological innovation (Romer, 1990; Aghion and Howitt, 1998).The endogenous growth theory tries to explain the link between financial development and economic growth. Levine (1997, 2005) highlights the theoretical literature on the finance-growth relationship, suggesting that better developed financial systems experience faster economic growth. He argues that costs of information gathering and transactions are the incentives for the emergence of financial markets and institutions. Financial systems may affect capital formation and economic growth by providing such functions as facilitating the trading, hedging, diversifying, and pooling of risks.

The model developed by Diamond and Dybvig, (1983) highlighted the role that financial markets can play as providers of funds to the deficit economic units. The model assumes a 'One Bank' economy and that economic agents face two different investment opportunities depending on the rate of return and access to credit facility. The model proceeds with the two (2) assumptions that there are first, projects with high streams of returns, though risky, but illiquid, while the other is liquid with low-returns. The Bank is assumed to be risk-averse, such that illiquid projects are not financed during periods of economic shocks, and hence firms with such difficulties would lack fund to counteract any short-run distortions. Meanwhile, since the bank is risk averse, there is an increasing likelihood for projects with low-returns having negligible risks to continue to receive credit from the formal banking sector. To this end, the risk-appetite of the Bank becomes a key factor that influences quantity of domestic investment, and hence economic growth.

Bencivenga and Smith, (1991) develop an endogenous growth model, similar to Diamond and Dybvig, (1983) model. In their framework, banks shift savings toward productive investments, thus causing financial intermediation to be growth-promoting. The model show that bank can influence the rate of resource allocations and real rates of economic growth, through its intermediation process by reducing amount of savings held in unproductive liquid assets, thereby preventing the misallocations of capital. In the model, banks circumvents liquidity risk challenge by increasing funds allocated to projects with high-return, thus leading to rise in total number of investment which can boost economic growth. Hence, the emergence of financial intermediation thus provides a vehicle to improving liquidity risks management. In their own model, Greenwood and Jovanovic, (1990) showed that financial intermediaries accelerate economic growth by providing information on firms that enhances efficient allocation of scarce capital for investment.

A study by Eggoh and Villieu, (2014) analyzes the role of financial intermediation in a simple endogenous growth model, based on the assumption that banks are the only intermediaries between households and firms. Banks are assumed to face monopolistic competition, while the real economy faces perfectly competitive market in service provision. The model allows the possibilities of attaining two balanced growth paths (BGP) in the long run and that there is a significant externalities existing between the real and financial sector. Additionally, the existence of multiple growth equilibria associated with varied levels of financial development can either be a 'local' or 'global' indeterminacy. The model used the existence of local indeterminacy to explain lack of consensus in the finance-growth nexus, such that two initially identical economies that converge on the same BGP will grow at different rates during the transition phase. The global indeterminacy concept, on the other hand, explains why two initially identical economies may grow at different rates on the long run. Thus, the indeterminacy concept was used to explain why two countries with similar fundamentals (preferences, technology and initial capital and bank loan stocks) might display different correlations between financial development and economic growth. In the end, these concepts make the model consistent with the positive or negative findings in empirical studies to ascertain the impact of financial development on economic growth in various economies, whether in time series or panel data analysis.

Meanwhile, majority of contributors to the endogenous growth literature, with few exceptions like Easterly, (1993), believe that government intervention in the financial system distorts financial innovation which lowers the equilibrium growth rate of the economy. King and Levine, (1993b) analysis holds that the imposition of credit ceiling deters economic agents' investment incentives, and acts like tax on innovative activities that tend to hinder higher economic growth trajectory.

Access to financial services (savings and loans) for households is increasingly recognised as linked to economic growth and poverty reduction. Theory suggests that financial market imperfection may be particularly harmful for poor entrepreneurs without collateral, credit histories, or connections (see Galor and Zeira, 1993; Gulde, et al., 2006). Credit constraints that limit poor households' ability to finance high-return projects can reduce the efficiency of resource allocation, lowering growth and poverty reduction. Evidence indicates that finance is a binding constraint to firm growth, even for new firms that rely on external source of finance (Beck, Demirguc-Kunt, and Maksimovic, 2005).

The theory of financial liberalisation came under severe attack for ignoring the role of the stock market in the process of economic development. Cho, (1986) noted that equity financing removes adverse selection and moral hazard concerns often associated with conventional banking operations, thereby aiding economic growth. This posture is similar to Grossman and Stiglitz's (1980) argument that stock markets stimulate the production of information about firms. Levine and Zervos, (1996) posited that the presence of a well-developed stock market provides long-term financing needs of firms that conventional banking practice would fail to do. This, thus, encourages investment, and further boosts economic performance. Singh, (1997) found that stock market provides alternative source of external financing in developing countries but observed that financial liberalisation makes the financial system more fragile which likely would not enhance long-term economic growth. Levine (1997) states that financial development has positive effects on capital accumulation and economic growth; similarly, King and Levine (1993b) and Acemoglu, et al. (2006) argued that financial development may have positive effects on technological innovative activities that favourably encourage economic growth.

Financial intermediaries may improve risk management with implications for resource allocation and growth. Levine, (2005) divides the discussion of risk into three: cross-sectional risk diversification; inter-temporal risk sharing; and liquidity risk. He explains that financial systems, such as banks, mutual funds, and securities markets reduce risks associated with individual projects, firms, industries, regions, and countries, which can affect long-run investment and economic growth. In finance circle, projects with high returns are often considered riskier than low-return projects, and savers are essentially averse to risk. Thus, as financial markets helps to diversify risk, it induces a portfolio shift toward projects with higher expected returns and in so doing financial system helps in alleviating market frictions, and hence influence savings rates, investment decisions, and technological innovation with sole aim of galvanising long-run growth rates (Gurley and Shaw, 1955; Patrick, 1966; Greenwood and Jovanovic, 1990). Bencivenga, Smith and Starr, (1995), using endogenous growth model, show that liquidity in the stock market reduces disincentives to investing in long-duration projects.

Also, Obstfeld, (1994) study shows that internationally integrated stock markets reduce international risk and make investors want to invest in high-return investments. Levine, (1997) showed that stock markets may affect growth positively by increasing liquidity and reducing uncertainties around investment through inter-temporal risks. Acemoglu and Zilibotti, (1997) also develop a model that shows the link between cross-sectional risk sharing and economic growth.

Allen and Gale, (1997) theorised on the role of financial intermediaries in inter-temporal risk sharing, and they show that risks that cannot be diversified at a particular time can be spread across several generations. IMF, (2008) contends that domestic financial sector liberalisation enhances the way in which economies respond to various real and financial shocks. This is because policies of financial sector reforms help to reduce output costs resulting from adverse terms of trade and foreign interest rate shocks. The improvement in credit availability induced by financial reform initiatives becomes a key stabilising vehicle for the entire economy. Allen and Gale, (1997) further asserted that liberalising the financial system improves resilience of the economy to real shocks because reforms strengthen the link between the real and financial sectors.

In an endogenous growth model, Pagano, (1993) posited that economic growth is affected positively by financial development due to improved savings of otherwise idle resources. The model suggests that financial development influences economic growth via three broad channels. First, it raises the proportion of savings channelled to investment; second, it increases the social marginal productivity of capital; and lastly, it influences the overall private savings rate. In the model, financial intermediation is described as a process which transforms, say one (US$1) dollar of savings into $\phi < 1$ dollar available for investment. On the back of the intermediation process, banks transform the flow of anonymous savings into specific loans that firms can use for financing their investment decisions. This mechanism takes account of the specificity of banks in the intermediation process: banks are able to supervise investment projects and provide intermediation services to firms. The assumption of $\phi < 1$ represents the fact that intermediation is costly, but the model assumes that the coefficient, ϕ, positively depends on the financial sector workforce. From the foregoing, the higher the number of people employed in the financial sector, the more efficient the intermediation process is assumed to be. In the goods market, the technology is assumed to have a constant return-to-scale, with aggregate capital externality, which allows obtaining an endogenous growth path in the long-run

Besides the main focus on the role of financial development in economic growth, researchers have also studied the comparative importance of bank-based and market-based financial systems to economic growth (Goldsmith, 1969; Boot and Thakor, 1997; Allen and Ndikumana, 2000; Demirgüç-Kunt and Levine, 2001). Researchers like, Demirgüç-Kunt and Levine, (2001), observed that financial system becomes more market-based as the countries developed and that most developing economies have mainly bank-based financial systems. While some of these studies show the advantages of bank-based financial systems, others show the benefits of market-based financial systems. Supporters of market-based financial systems believes that the stock market provide better risk-management tools and greater flexibility, compare to bank-based systems, which only provide basic risk-management services for standardized operations. Stock markets are believed to make high-risky projects more attractive for individual investors by diversifying risk and may also stimulate information gathering about firms (Svaleryd and Vlachos, 2005). A huge theoretical

literature exists on the link between stock markets and long-run growth suggesting that stock markets may promote growth.

Hung, (2003) developed an endogenous growth model to illustrate the importance of inflation in determining the role of financial development on economic growth. In a panel of 75 countries, the study revealed that the positive effect of financial development on economic growth diminishes, as inflation increases. Moreover, English (1999) shows that higher inflation rate causes households to substitute purchases (consumption) for savings. This occurrence, the author, believes may lead to enlargement of the domestic financial systems on improvements in savings in formal financial institutions.

3.3.2. The Finance - Human Development Nexus

Most developing countries, SSA inclusive, embarked on financial liberalisation and the use of other macroeconomic policy tools to attain sustainable economic growth, while also achieving their poverty reduction goals. The main theoretical underpinning often used in understanding the linkage between finance, economic growth and income by development economists is the Trickle-Down Theory of growth and development.

Aghion and Bolton, (1997), for example, gave three conclusions from their model. First, when the rate of capital accumulation is sufficiently high, the economy converges to a unique invariant wealth distribution. Second, even though the trickle-down mechanism can lead to a unique steady-state distribution under laissez-faire, there is room for government intervention to redistribute wealth from the rich lenders to poor and middle-class borrowers to improve production efficiency and greater equality of opportunity, while also accelerating the trickle-down process. Third, the process of capital accumulation initially has the effect of widening inequalities but in later stages it reduces them.

In sum, proponents of the trickle-down theory argued that economic gains by the wealthy and investors (such as tax cuts) result in investment or purchases that ultimately lead to more jobs for the middle and lower classes by creating economic growth that increases demand for goods and stimulates production. The trickle-down

theory postulates that economic growth would either trickle down to the poor through job-creation, and other economic opportunities or create the necessary conditions for the wider distribution of the economic and social benefits of growth (See Aghion and Bolton, (1997); Jalilian and Kirpatrick, (2007) and Odhiambo, 2010a and b).

The final conclusion of Aghion and Bolton, (1997) is somewhat similar to the popular Kuznets's inverted-U hypothesis[14]. It suggests that economic growth may increase income inequality at the early stage of development, but reduce income inequalities as the economy matures and become more industrialised. The ensuing theoretical link is that a liberalised financial sector promotes economic growth, which in turn, can lead to poverty reduction. Thus, to Perkins, Radelet and Lindauer, (2006) adopting deep financial strategy that enhances savings mobilisation and credit availability to all types of domestic investors would boost income and employment growth. In line, Green, Kirkpatrick and Murinde, (2006) opined that financial sector by encouraging micro and small enterprises contribute to poverty reduction and economic growth. Jalilian and Kirpatrick, (2007) and Odhiambo, (2010a/b) found that financial deepening through improvement in intermediating efficiency lowers cost and improves access to credit by the poor. Productivity improves generally as the number of unbanked people declines, thereby boosting investment and economic growth.

3.4. Empirical Literature

3.4.1. Financial Sector Reform and Financial Sector Development

The hypothesised linkage is that financial sector reform would lead to financial development as predicted by McKinnon, (1973) and Shaw, (1973). Both theorists opined that administratively-held interest rate at low levels negatively affect savings rate, which thereafter distort investments and economic growth. To this end, the liberalisation of the financial system will lead to higher levels of financial innovations and financial development.

Tressel and Detragiache, (2008) found that banking sector reforms led to financial deepening in 91 countries studies over 1973–2005 periods, but these were countries with institutions that places checks and balances on political power. Guiso, Sapienza

[14] See Kuznets (1955) and Kuznets (1963) for more interesting analysis

and Zingales, (2006) argued that bank deregulation, specifically the removal of credit and entry constraints in the Italian financial system led to improved access to credit and lower gap between deposit and lending interest rates due to increased competition. Bekaert, Harvey and Lundblad, (2005) find that financial liberalisation deepens the financial system. This is because financial reforms stimulate financial intermediation through improvement in risk management, entrance of efficient foreign banks, while also boosting the offering of new financial instruments and services.

Anyanwu, (1995) found financial reform to have deepened the financial sector in Nigeria, using M2/GNP as measure of financial development. Oyaromade, (2005) findings suggests that financial liberalization deepened the financial market in Nigeria and allows the market to be more efficient in its financial intermediation function, such that savings respond positively to changes in financial variables. Berube and Cote, (2000) study on determinants of personal savings, observed that the coefficient for financial liberalisation had a positive and significant influence on the Canadian long-run savings function, suggesting that financial reforms have had a positive impact on resource and savings mobilisation.

Chinn and Ito, (2002) investigated the link between liberalising the capital account and financial development, using panel data analysis for 1977-1997 periods. The study suggests that there a strong positive relationship between financial development (proxy by private credit and stock market turnover) and capital controls, when institutional quality (legal and property rights) are well established. The findings were broadly similar using data for developing and emerging economies. In 2005, Chinn and Ito tested whether financial account openness results in development of the equity market. The result suggests that stock market deepens or respond positively to capital account openness.

However, some researchers have traced cases of banking crises to process of the financial deregulation, and studies are increasingly associating the occurrence of financial meltdown to rising commitment of monetary authorities to liberalise the domestic financial sector. Demirgüç-Kunt and Detragiache, (1998) analyze the relationship between banking crises and policies aimed at increasing financial liberalization using data of 53 countries for the period 1980 to 1995. Their findings suggest that banking crises are more likely to occur in highly liberalized financial

systems. The study also finds that the impact of financial liberalization on a fragile banking sector is weak, even when the institutional environment is relatively strong. The indicator of financial reform used by Demirgüç-Kunt and Detragiache, (1998) is a dummy variable, taking a value of one for the first year in which some interest rates were liberalized, and zero otherwise.

Study by Seck and El Nil, (1993) find that financial liberalisation may not lead to a reduction in intermediation margin, if interest rate liberalisation, reduction in reserve requirements and freedom of entry in the banking sector, are not accompanied by an increase in competition. On the basis of a panel analysis, Caprio and Martinez, (2000) find that government ownership of banks increases the likelihood of banking crisis. However, Barth, et. al., (2004), using cross-country analysis, do not find that government ownership is significantly associated with increases in bank fragility after controlling for regulatory and supervisory environment.

McDonald and Schumacher, (2007) examined the role of legal institutions (creditor rights and information sharing) on financial markets in SSA countries. They use data for 37 countries for selected years between 1983 and 2004, and construct three data points of averages for 1983 to 1987, 1993 to 1997, and 2000 to 2004. Financial development is measured as the ratio of private credit by deposit banks to GDP. In their analysis, private bank credit was regressed on (an index of) financial liberalization, legal/institutional variables, and control for macroeconomic factors. The index of financial liberalization used in their study was based on Gelbard and Leite, (1999) data, which ranges from 0 to 100. The index is an aggregation of the following conditions - whether interest rates are liberalized, the number of years real lending and deposit rates were positive, the existence of a significant informal financial sector and directed credit allocation mechanism. They observed, amongst other findings, that financial liberalization, by itself, promotes financial deepening. The study concludes that, given the level of financial liberalization, countries with strong institutions, particularly where creditors' rights are protected, information asymmetries removed, and strict adherence to the rule of law, would likely experience higher financial development.

Burkett and Dutt, (1991) and Kaminsky and Schmukler, (2002) find evidence that financial reform leads, on average, to more output volatility, and subsequently to

financial instability. Obadan, (2006) explains how weak or poorly regulated financial institutions can make a country highly vulnerable to financial crisis. Soyibo, (1994) observed that financial depth measured by M2/GDP fell immediately after financial liberalisation in Nigeria, notably 1987-1989, but however rose during the 1990 and 1991 periods. Bayoumi, (1993), using UK data from 1971 to 1988, observed an inverse relationship between financial liberalization, which involves the relaxation of credit constraints, and savings pattern in the banking system. The study posits that by removing constraint to borrowing, economic agents increase consumption rate, rather than savings, which negatively pace of financial development and economic growth.

Agca, De Nicolo and Detragiache, (2008) highlighted that while domestic financial liberalisation has not succeeded in improving access to credit at lower cost of funds in emerging markets, such strategy led to higher leverage in companies in advanced countries. Ikhide and Alawode, (2001), using discriminant analysis, demonstrates that the health of banks deteriorated following financial reforms in Nigeria, although the study cautiously identified wrong sequencing as a major factor in the performance of the financial reform measures. Arestis and Demetriades, (1999) hinted that, following the post-liberalization era in developing countries, the instability that manifested in the banking sector was due to unsustainable rise in interest rate that exacerbated further existing information-related problems. Thus, financial liberalization efforts, amidst imperfect competition, resulted in wider gap between lending and deposit interest rates, which worsen further attaining prevailing financial inefficiency in the region.

Loayza, Schmidt-Hebbel and Serven, (2000) examined the effectiveness of financial liberalisation on savings rate using time-series macroeconomic data set for industrial and developing countries over a 30-year period. The study finds financial liberalisation to have detrimental effects on private savings. Also, greater financial depth and a higher real interest rate were found not to raise the level of aggregate savings. Bandiera, Caprio, Honohan and Schiantarelli, (2000) found no evidence of a positive impact of real interest rate on savings, using time-series data of eight countries[15] from 1970 to 1994. The authors found that the impact of financial

[15]The countries are Ghana, Zimbabwe, Malaysia, Indonesia, South Korea, Mexico, Chile, and Turkey and financial liberalisation index constructed include control on interest rate, reserve requirement, credit, bank ownership, capital account as well as prudential regulation.

liberalisation on savings is mixed across sampled countries. Arestis and Glickman, (2002) assessed the effect of different financial reform policies (namely interest rate controls and liquidity requirements) on financial development in six (6) developing countries, using time series technique, and conclude that the effect of financial liberalisation on financial development is ambiguous. Hence, this present study attempts to explore further the relationship between financial reform and financial development using a financial reform index that shows gradual policy changes in financial sectors in SSA.

3.4.2 Financial Sector Reform and Economic Performance

Empirical evidence on impact of financial sector reform on economic growth is mixed, indicating that financial reform is a necessary, and may not a sufficient condition, for economic growth (Eschenbach, 2004). Studies have suggested that financial liberalisation promotes the development of the financial sector, and subsequently facilitates economic development. McKinnon, (1973) and Shaw, (1973) identified savings as one transmission mechanisms through which financial liberalisation is expected to affect economic growth. Michalopoulos, Laeven and Levine, (2009) model predicts that technological innovation and economic growth eventually stop unless financiers innovate.

Bekaert, Harvey and Lundblad, (2001a) found equity market liberalisation to raise the level of real economic growth rate by 1%, on the average, using four (4) different sample sizes ranging from 1980 to 1997 periods. The country sizes include 28, 50, 75 and 95. Sheehan, (1998) observed that private capital flows to Asian countries rose more than fivefold between 1993 and 1996, resulting in high economic growth in the post-liberalisation era. Obstfeld, (1998) and Stulz, (1999) held that liberalisation improves the functioning of the financial system, facilitates cross-country diversification, channels savings into their most productive uses beyond global boundaries, increases the availability of funds, and thus boost growth in the process. Obamuyi and Olorunfemi, (2011) examine the effects that financial reform and interest rate will have on Nigeria's economic growth. The cointegration and error correction modelling technique were used on time-series data from 1970-2006. The results indicated that financial reforms and interest rates have positive and significant

effect on economic growth. The results show that there exist a unique long-run relationship between interest rates and economic growth.

In line, studies by Abiad, Oomes and Ueda, (2008); Galindo, Schiantarelli and Weiss, (2007) found that financial sector reform lead to more efficient allocation of investments. Seck and El Nil, (1993) examined the impact of financial liberalization on investment in Africa between 1974 and 1989, using 21 countries and found that real interest rate positively affect money growth and investment. Using cross-country data on 34 countries, Gelb, (1989) result suggests that real interest rate has a positive effect on investment efficiency and quantity, while Laumas, (1990) using data from India for the 1954 to 1975 period found a positive impact of interest rate liberalisation on private investment and economic growth. Fowowe, (2011), using an unbalanced panel data ranging from 1980 to 2006, found policy of financial reform to have a positive and significant influence on private investment in SSA countries, confirming the financial liberalization hypothesis. De Melo and Tybout, (1986) observed that financial development led to an upward shift in investment, and that investment is positively related to interest rates and growth, especially in the post-reform period. Kitchen (1986) also noted that liberalisation of interest rates, leading to greater availability of short-term credit, may have the effect of increasing the utilisation of existing capital stock. More so, La Porta, Lopez de-Silanes and Shleifer, (2002) sought to ascertain the impact of government ownership on financial development. Result suggests that lower degree of government ownership of banks is associated with higher levels of banking sector development, and quicker pace of growth in the real economy. In other words, the study finds that a higher degree of state ownership is negatively associated with bank development and economic growth.

Financial liberalisation is observed, on average, to improve economic performance on the long-run, relative to the short-run. Although, number of studies have reported that financial liberalisation has not resulted in higher economic growth in many SSA countries. Burkett and Dutt, (1991) argued that the liberalization of the financial sector leading to increases in real deposit rate may cause aggregate output (and growth) to in fact decline. Aryeetey, (2003) hinted that financial liberalization (total deregulation of markets), amidst presence of institutional and structural bottlenecks, may not yield desired economic growth. This was true for most African countries in

the 1980s and 1990s. In Tobin's (1965) portfolio framework[16] of household sector and assets allocation structure, it is believed that raising interest rates due to financial liberalisation put prices in the economy on a higher trajectory through cost-push effect, thereby reducing supply of real credit for investment in the short run. Studies by Demirgüç-Kunt and Detragiache, (1998) and Kaminsky and Schmukler, (2001, 2002) show that domestic financial liberalisation may render economies more unstable and vulnerable to external shocks. The reason proffered is that, first, financial liberalisation may increase risk-taking activities, and consequently increases loan defaults as financial institutions are tempted to finance riskier projects in return for a higher expected returns. The studies also suggest that information asymmetries (as a result of market distortions) lower allocative efficiency of financial system, with adverse effects on growth.

Using a cross-sectional data analysis, Didier, Hevia and Schmukler, (2011) find that within the group of financially- and trade-integrated countries, the systemic and global dimensions of the 2008 global crisis dominated country-specific strengths, leading to a highly synchronized and homogeneous deceleration of growth and investments, especially in emerging countries[17] with more open economies. The study also noted that low-income countries that were less integrated to the rest of the world suffered smaller growth collapses. The increasing speed of globalization and securitization[18] amplified the transmission of the financial shock across markets and borders due to complex interconnectivity amongst financial institutions across the world.

However, very limited studies provide evidence that process of financial liberalisation can reduce capital formation. But study by Campbell and Mankiw, (1991) finds that when financial liberalisation relaxes consumer credit constraint, it lowers the savings ratio, thereby lowering rate of capital accumulation, and hence systematically reduces economic growth rate. Warman and Thirlwall, (1994) found contradicting results even

[16] In the framework households allocate assets among currency, bank deposit and, curb market loans. A rise in deposit rate due to financial liberalization raises demand for bank savings but reduces demand for curb market loans. This leads to decline in supply of working capital in the curb markets, thereby raising interest rates.

[17] Economies are classified as "emerging" if they have access to loans from the World Bank (IBRD); Low income if they only have access to loans from the World Bank's International Development Association (IDA) earmarked for very poor countries.

[18] The process of transforming illiquid assets, like mortgages, into traded securities.

with methodology similar to Bayoumi, (1993), and thus the study concludes that any favourable effects of financial liberalisation (and higher real interest rates) on economic growth comes through increased productivity of investment. In their own study, Lensink, Hermes and Murinde (1998) examined the effects of financial liberalisation on capital flight in nine SSA countries[19]. Applying a portfolio model, results indicate that the three measures of financial liberalisation employed, namely interest rate deregulation, decrease in reserve requirement and a change in exchange rate policy, reduces capital flight in countries covered, although the effect was observed to be very small. The authors conclude that though capital flight can be decreased by introduction of financial liberalisation, other types of reforms are necessary to prevent scarce domestic funds from flowing abroad.

Dehejia and Gatti, (2002), using panel data of 172 countries on five (5) different sample periods (1950-1960; 1950-1970; 1950-1980; 1950-1990 and 1950-1995) find that the extent of child labour (an indicator of poverty) reduces with increases in access to credit by the core poor in the economy. This finding shows that a significant positive relationship tends to exist between financial development, occasioned by reforms, and poverty reduction, hence human development. Sowa, (2002) argued that within the general context of macroeconomic reforms, financial liberalisation may lead to poverty reduction, if growth is engendered in the economy, and that financial reform can directly lead to poverty reduction, if financial restructuring enhances access to credit for the poor, and improving their welfare.

Bakwena and Bodman, (2008, 2010) argued that a deepened financial system positively affects poverty reduction. Zhuang, et al., (2009) noted that financial system through its positive impact on growth, indirectly contributes to poverty reduction. Epstein and Heintz, (2006) held that financial sector is the primary conduit through which monetary policy affects real economic outcomes, and since monetary policy determines the resources available to financial institutions, it behoves the monetary authorities to effectively synchronise monetary policy objectives with financial reforms to improve employment opportunities, reduce poverty and support human development.

[19] This included Cote d'Ivore, Ghana, Kenya, Madagascar, Malawi, Mauritius, Nigeria, Rwanda and Sierra Leone.

Japelli and Pagano, (1994) used data from European countries to show that after a certain point, further financial liberalisation could have negative welfare implications, and thus supports Kohsaka, (1984) and Aryeetey, (2003) that financial repression can be put to advantage in the early stages of economic development. This line of thoughts led Stiglitz, (1994) to list three (3) ways that financial repression can positively influence economic performance. The fact that low interest rate reduces the possibility of default on loans, lowers cost of capital, and lastly, with directed credit to priority sectors of the economy, there is a higher prospects of spill-over in technology.

Pill and Pradhan, (1997) undertook a comparative study on financial liberalisation in Africa and Asia. Looking at the experience of liberalisation in both continents they give an analysis on why outcomes differed in both continents. The study finds financial liberalisation to have been more successful in Asia than in Africa. Pill and Pradhan, (1997) conclude that for financial reforms to succeed, three essential pre-conditions must be satisfied. First, macroeconomic imbalance, such as, inflation, balance of payment (BOP) and fiscal deficit should be at manageable levels. Second issue covers the entrenchment of sound banking practices that eliminate directed credit and rationing, as well as other government interventions in the financial market. Lastly, the study underscored the need to strengthen the institutional framework, especially, legal, supervisory, accounting and management infrastructure. On the back of the aforementioned issues, the study summed that the quality of institutions and general environment for conducting financial liberalisation was far less favourable in Africa than in Asia.

3.4.3. Financial Sector Development and Economic Performance

Although the financial development and economic growth link is well-established theoretically, empirical findings are however, less conclusive. Results have been found to depend on the current level of financial and economic development. Empirical findings on the influence of financial development on economic performance can aptly be categorised into two main points: first, cross-section and panel data analysis (the traditional analyses), as well as studies examining the causal relationships.

The literature is replete with studies on financial development and economic growth (see *Appendix 1; Table 2-4*). Studies by Murinde and Eng, (1994) and Obstfeld,

(2009) opined that financial development is a concomitant to economic growth. Goldsmith's study in 1969 was the first to describe the existence of a positive relationship between financial development and GDP per capita. King and Levine, (1993) also found a positive and significant relationship between several indicators of financial development and growth in GDP per capita, using mostly monetary indicators to represent banking sector size. Levine and Zervos, (1996) observed a positive partial correlation amongst financial development indicators (stock market, financial depth) and GDP per capita growth.

Allen and Ndikumana, (1998), using various indicators of financial development, investigates the role of financial intermediation in stimulating economic growth in Southern African Development Community (SADC)[20] member counties. The results lend some support to the hypothesis that financial development is positively correlated with the growth rate of real per capita GDP. This study suggests that the finance-growth nexus is a long-run phenomenon.

Rioja and Valev, (2004) examine the channels through which financial development influence economic growth in a panel of 74 countries between 1961 and 1995. They posited that finance has a strong positive effect on productivity (growth) mainly in more developed countries. In developing countries, however, the effect of financial development on output growth was primarily through capital accumulation. Jalil, Wahid, Abu and Shahbaz, (2010) find a positive monotonic relationship between financial development and economic growth for South Africa.

Mwaura, Ngugi and Njenga, (2009) addresses whether level of financial development are associated with differences in economic growth from 1984 to 2002, using a sample of thirteen (13) African countries. They estimated a base-line model of real income per capita, using panel data technique before financial development variables were progressively introduced. The study finds that financial development contributes immensely in explaining growth in real income, as coefficients associated with financial development remained high.

Fink, Haiss and Mantler, (2005), using a sample of 33 countries (11 transition economies and 22 market economies), found that financial development has positive

[20] These countries are Angola, Botswana, DR Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

growth effects in the short-run, rather than in the long-run. Fink, et al. (2005) investigated the impact of the credit, bond and stock segments in nine (9) European Union (EU)-accession countries over the early transition years (1996–2000) and compared these to mature market economies and to countries at an intermediate stage. They found that the transmission mechanisms differ, and that financial market segments with links to the public sector (but not to stock markets) contributed to economic stability and growth in the transition economies.

Ndikumana, (2000) examined financial determinants of domestic investment in SSA in a panel analysis of 30 countries over 1970-1995. The study concludes that financial factors are important in determining domestic investment in SSA, and that strong financial development leads to high future investment levels and growth. However, authors like Odedokun (1996); Benhabib and Spiegel, (2000); Khan and Senhadji, (2003); Mwaura, Ngugi and Njenga, (2009); Akinlo and Egbetunde, (2010); Obamuyi and Olurunfemi, (2011) observed that the association between financial development and economic growth is severely influenced by the nature and structure of proxy used.

Rajan and Zingales, (1998); Beck, Demirguc-Kunt and Maksimovic, (2005) show that countries with deeper financial systems also experience faster reduction in income inequality and poverty rates. Intartaglia, (2014) empirically examines the effect of financial development on poverty for a sample of developing countries from 1985 to 2008. The analysis provides some evidence in favour of a mitigating effect of financial development on the poor when poverty is measured by the headcount index or the poverty gap at the cut-off line of $2 day (absolute poverty). The finding was found to be robust to choice of a more conservative poverty line based on $1.25 a day. The study finds little evidence that financial development reduces poverty, when poverty is measured in terms of relative poverty; that is income share of the bottom quintile.

However, study by De Gregorio and Guidotti, (1995) found negative effect of private credit, an indicator of financial development, on economic growth in a panel data of selected Latin American countries. Also, Ayadi, Arbak, Ben-Naceur and Pieter De Groen (2013) explored the relationship between financial sector development and economic growth, using a sample of northern and southern Mediterranean countries for the years 1985-2009. The authors included several variables to measure the

development of the financial sector to account both for quantity and quality effects. The results indicate that credit to the private sector and bank deposits are negatively associated with growth, which confirms deficiencies in credit allocation in the region and suggests weak financial regulation and supervision. On the stock market side, the results seem to indicate that stock market size and liquidity play a significant role in growth, especially when accounting for the quality of an institution. Thus, a cross examination of results assessing the poverty reduction-effect of financial development have shown that the choice of the indicator used to proxy financial development is very crucial as it remarkable influence the conclusions that can be drawn from the study.

3.4.4 The Causal Link Among Financial Sector Reform, Financial Sector Development and Economic Performance

Several techniques have been used by extant studies to show the causality among financial reform, financial development and economic performance (particularly economic growth). These analyses cover the use of time series, cross sectional and panel data approaches, with evidence of divergence in findings. Hence, findings on causality between financial development and economic performance have been sharply debated in the literature. Studies, like Mathieson (1980), Fry (1989), Roubini and Sala-i-Martin, (1992), King and Levine, (1993b) and Levine, Loayza, and Beck, (2000) support the supply-leading hypothesis, while Jung, (1986); Robinson, (1952); and Shan, Morris and Sun, (2001) allude to the demand-following hypothesis, implying finance follows where enterprise leads. Bi-directional link was found in studies by Lewis, (1995); Luintel and Khan, (1999); Al-Yousif, (2002), while results obtained by Lucas, (1988); Stigliz, (1994); Rodrik and Subramanian, (2009) dismissed finance as an over-stressed determinant of economic growth[21]. To these authors, financial intermediation does not play an important role in economic development process. These divergent views amongst economists indicate that the finance-growth debate is far from over.

Ahmed, (2010) used panel data and dynamic time series to estimate the relationship between financial liberalization, financial development and growth in 15 countries in

[21]Kitchen (1986) termed this view 'casino hypothesis' referring to scholars that do not consider the activities of the financial sector as important for economic development.

SSA. Granger causality test indicated a long-run equilibrium relationship between financial development and economic growth and consistent with the view that financial development can act as an engine of growth, thereby playing a crucial role in the process of economic development. The study finds little evidence to support the hypothesis that financial liberalization directly leads to growth, while the ratio of private sector credit and share of domestic credit to income were employed as indicators of financial development.

Odhiambo, (2008), using cointegration and error-correction techniques, reveal that there is a distinct unidirectional causal flow from economic growth to financial development, and warns that any argument that financial development unambiguously leads to economic growth should be treated with extreme caution. Meanwhile, Xu, (2000) adopted a multivariate vector autoregressive (VAR) approach to examine the effects of financial development on domestic investment and output in 41 countries between 1960 and 1993. The result shows that financial development is crucial to GDP growth, and that domestic investment is the channel through which financial development influence economic growth. King and Levine, (1993b) work was on the relationship between financial intermediation and economic growth, using cross-country model. Their result suggests that a positive association exist between measures of macroeconomic performance and financial development indicators. The study employed four (4) financial indicators and four (4) growth indicators.

Akinlo and Egbetunde, (2010), using Vector Error Correction Mechanism (VECM), finds a long-run relationship between financial development and economic growth in ten (10) SSA countries from 1980 to 2005. The causality result was mixed for different countries. Specifically, the study reported that financial development granger causes economic growth in Central African Republic, Congo Republic, Gabon and Nigeria; reverse causality only in Zambia, whereas bi-causation was observed in Chad, Kenya, Sierra Leone, South Africa and Swaziland.

Caporale, Rault, Sova, and Sova, (2009) reviews the main features of the banking and financial sector in ten (10) new EU members[22], and then examines the relationship between financial development and economic growth in those countries by estimating

[22] These include Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia

a dynamic panel data model covering 1994 to 2007. The evidence suggests that the stock and credit markets are still underdeveloped in the economies, and hence contributes less to economic growth. The study however, finds banking sector development to have accelerated economic growth. Furthermore, Granger causality test indicates that causality runs from financial development to economic growth, but not in the opposite direction.

Berglöf and Bolton, (2002) finds that the link between financial development and economic growth is not very strong in the first decade of economic transition. The study used the ratio of domestic credit to GDP as financial sector development measure. Kenourgios and Samitas, (2007) examined the long-run relationship between finance and economic growth for Poland, and the study concludes that credit to the private sector is a key driver of long-run growth. Hagmayr, et. al., (2007) investigated the finance-growth nexus in four emerging economies of South-Eastern Europe for the period 1995-2005, and found a positive and significant effect of bond markets and the capital stock on growth. Khan and Senhadji, (2003) find financial depth to have a strong positive and statistically significant relationship with economic growth, using cross-sectional data analysis of 159 for the period from 1960-1999. Sunde, (2012) found a bi-directional relationship for Namibia using granger causality tests, and findings also provide evidence of reverse causality. Carby, Craigwell, Wright and Wood, (2012) conclude that a short-run unidirectional causality runs from economic growth to financial development and bi-directional in the long run.

Most cross-country studies, such as King and Levine, (1993a/b), Levine and Zervos, (1996), and panel data research like Levine, et al., (2000) agree that financial development is positively related to economic growth, extant time-series studies give contradictory results. Some of these studies conclude that the causality between financial development and economic growth is bi-directional, while others found unidirectional causality and some no relationship. In line, Yıldırım, Ozdemir and Dogan, (2013), conclude that the direction of causality and results depend on the kind of indicators used to represent financial development. Such that in the presence of asymmetry information, Ahmed and Islam, (2010) argued that the effects of financial development on economic growth show evidence of divergence amongst different economies, even countries with comparable structural features and institutions.

3.5 Financial Sector Reform, Economic Performance and Institutional Structure

Studies have identified finance as important to attaining sustainable economic growth across countries, irrespective of the techniques/methodologies used. Despite the perceived importance of financial reforms to facilitate financial development and stimulate economic growth, it has been proven by researches that institutional and structural factors often affect the outcome. These factors cover dependency on natural resources with demand inelasticity, debt overhang, as well as other issues that generate institutional uncertainties, including mediocre reforms and weak regulatory environment.

Serhan and Mohammad, (2013) reported a lack of long-run relationship between financial intermediation and non-hydrocarbon output growth. The ordinary least squares (OLS) estimation shows that financial development has a negative and significant effect on real non-hydrocarbon GDP per capita growth. Beck, (2011) found banking systems to be smaller and stock markets less liquid in resource-based economies. Beck's study essentially provided evidence of resource-curse effect in the financial development, and hence resource wealth becomes a drag on attaining private sector-led economic growth and diversification. Furthermore, Bakwena and Bodman, (2008) argued that credit to the private sector in resource-rich nations lag behind what is obtainable amongst countries considered as poor in natural resource endowments. The study thus, concludes that financial institutions/development is influenced greatly by the nature of export commodity. The role of financial development in oil and non-oil (mining) economies was examined, using a panel data and GMM estimator for 44 developing economies from 1984-2003.

Some authors have studied the relationship between financial structure and economic growth. Demetriades and Law, (2006), for example, show that financial depth does not affect growth in economies with fragile institutions. Allen and Gale, (2000) examined the financial structure of Germany, Japan, United Kingdom and United States and found that bank-based financial systems offer better risk-sharing services than markets-based systems. Demirgüç-Kunt and Levine, (1996) show that developing countries have less-developed banks and stock markets, with more bank-based system; whereas developed countries have larger, more active and efficient financial sector. Demirgüç-Kunt and Huizinga, (2000) argued that financial structure

has important implications for long-run economic growth. Further, Demirgüç-Kunt and Levine, (2001) argued that countries with weak legal institutions tend to have bank-oriented financial systems, rather than market-oriented ones. Tadesse, (2002) shows that bank-based systems are superior to market-based systems in countries with underdeveloped financial sectors, whereas market-based system outperforms bank-based system among countries with developed financial sectors. However, Beck, Levine and Loayza, (2000) found no significant difference between market-based systems and bank-based systems, in terms of their influence on economic growth. The study shows that only the level of financial development influences economic growth. Hence, they conclude that economies that heavily depend on external finance have faster economic grow, due to financing options provided by the capital market.

La Porta, Lopez-de-Silanes, Shleifer and Vishny, (1998) discuss the importance of the legal system in determining the enforceable contracts between firms and investors. To the authors, the observed differences among countries lie in the extent to which their financial systems protect investor rights, rather than in the distinction between bank-based and market-based systems. Djankov, McLiesh, and Shleifer, (2007) argued that countries that protect creditors through the legal system and information-sharing, have higher ratios of private credit to GDP, suggesting that places where the domestic legal reform have checks and balances, and equitable justice have faster credit growth.

Olofin and Afangideh, (2009) in their study of financial structure and economic growth, using time series data of Nigeria from 1970 to 2005 and three-stage least square estimation, concluded that developed financial system alleviates growth-financing constraints by increasing bank credit and investment activities which also positively influence output. It was also shown that developed financial system affects growth indirectly through investment channel. Stigler, (1971); Wu, Tang and Lin, (2010); and Cooray, (2011) find that government size positively affect financial sector size (financial development) in developing economies, and as such government intervention could help solve market failures. However, studies by Haber, et al., (2003); Herwartz and Walle, (2014) finds contrary results, suggesting that government size, amidst dysfunctional institutions (rent-seeking by public officials), adversely affects financial development, especially when the source of deficit-financing comes from the domestic financial market.

3.6 Gaps in the Literature

Based on the literature discussed in the sections above, we identify the following gaps in the literature, which we seek to provide some insights into in the context of SSA.

1. The review on financial sector reform and financial development does not provide clear-cut empirical evidence on the impact of financial reform on financial development. This is evident in the mixed results found in the literature from the various studies that have assessed the effects of financial reform on financial development. As far as we know, none of the empirical works we reviewed attempted to ascertain whether differences in income-levels and presence of stock market affect the relative impact of financial reform on financial development and economic performance within the context of a developing economy, like SSA.

2. Studies on the effects of financial reforms and financial development have mostly failed to incorporate the influence of such socio-economic determinants of financial development, like legal origin, presence of risk experts, government intervention and natural resource abundance. This has the potential to lead to a bias in the results obtained in such studies. For instance, it is known that legal origin of a country, presence of highly trained risk experts, government intervention and resource dependence can influence economic activity of a country. Dependence on natural resources, for example, has been found to undermine institutional quality, including efficiency of financial systems in some countries. This probably explains the mixed nature of the results obtained in some related studies that fails to incorporate these important factors.

3. Despite advances in finance-growth literature, empirical findings on impact of financial sector reform on economic performance remain inconclusive and unresolved Studies that ascertain the extent to which financial sector liberalisation through policy changes influenced the real sectors, are mainly on economic growth which in itself is still heavily debated (see for example, Robinson, 1952; Mathieson, 1980; Jung, 1986; Lucas, 1988; King and Levine, 1993b; Lewis, 1995; Luintel and Khan, 1999; Levine, Loayza, and Beck, 2000; Al-Yousif, 2002). Hence, there are limited numbers of studies that have catalogued and evaluated the impact of financial reform on other macroeconomic performance indicators, other than economic growth. This study,

thus, expand the finance-growth debate to broader development indicators, like growth in gross capital formation, macroeconomic instability (measured by misery index) and human development (measured by the human development index). Moreover, studies are also relatively scarce that attempted to broaden understanding of the impact of financial reform on economic performance, using income and stock market effects. There are also very few studies, if any, that investigate the impact of each of the seven (7) dimensions of financial reforms on the real economy in SSA. Hence, explaining the nature of these relationships would no doubt improve policy making in the continent.

4. In addition to the foregoing, the causal relationship among policies of financial sector reform, financial sector development and broad-based macroeconomic performance indicators have remained largely not investigated. There is currently no known study, to the best of our knowledge, for SSA on this very important issue. An understanding of the nature of this relationship in the continent could possibly help provide answers to some basic societal questions across economies in SSA. The question is 'what is the nature of relationship between aggregate policy of financial reform and financial development in SSA? Also, how does financial reform relates with the chosen economic performance indicators within a system of equations? Thus, this study seeks to provide an insight into the flow of causation among financial sector reforms, financial development, real per capita GDP, gross capital formation, macroeconomic misery and human development, using time-series data of 14 SSA countries.

CHAPTER FOUR

THEORETICAL FRAMEWORK AND METHODOLOGY

4.1 Introduction

Development literature posits that the extent of financial intermediation is an important determinant of economic performance. Financial systems generally help to solve the indivisibility problem by mobilising savings from individuals in an economy for investment. Thus, financial systems help to create liquidity, provide risk management services, reduces transaction and information costs. Following the many benefits of financial system in an economy, the need to liberalised the sector and maintain market-determined interest rate continues to gain in attention. Structural reforms, financial liberalisation inclusive, have been found to exert economically vital impacts on allocative efficiency, as firms across different sectors react to the shifts in comparative advantage. This amplifies the complementarities between financial and real sector reform in achieving broad-based macroeconomic development. Figure 4.1 shows the interrelationship amongst policies of financial reforms, financial development and economic performance.

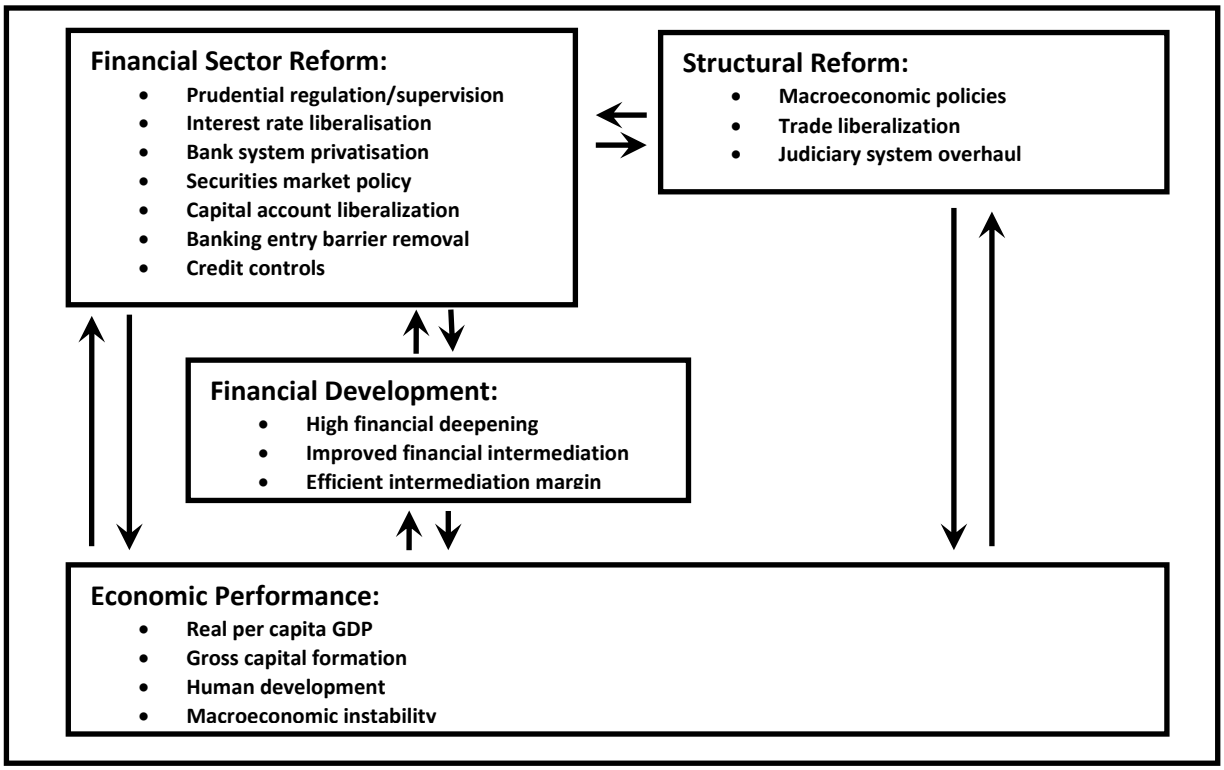


Figure 4.1: Relationship Between Financial Sector And Economic Performance
Source: Author.

The hypothesised linkage is that financial reform would lead to financial development which in turn would stimulate broader economic performance. From the diagram, the effect of financial reform on macroeconomic performance can be strengthened by reforms in other sectors, which essentially boost institutional quality. However, it was also shown that financial sector reform can have far-reaching direct influence on outcomes of the real economy, and vice-versa. The figure above thus, intensifies the significance of macro-financial linkages among financial reforms, structural reforms, and economic performance.

4.2 Theoretical Framework

The framework for the study begins with the traditional Cobb-Douglas (CD) production function. Labour and capital play significant role as input in the growth of output and generally have influence on equilibrium growth rates. The CD function was modified by including finance into the equation as enabler of inputs in the process of generating output. The study choice of our modelling strategy is based on the fact that financial intermediation is a veritable input that translates into economy-wide benefits. The financial sector mobilises savings, and thus provide investors with the required funds for investment, thereby improving economic performance. The challenge for this study is centred on introducing policies of financial reforms into the conventional CD function. The model that follows assumes that the effect of financial reform on economic performance passes through the technological progress factor in the CD function, by extension, the Solow growth model.

The initial CD production at time *t* is as follows;

$$Y_t = AK_t^{\alpha} L_t^{1-\alpha} \tag{1}$$

Where: K_t is units of capital employed at time *t*, L_t is number of labour used in production and the generation of output; A is the technical progress factor and assumed equal across all firms in the economy. The elasticity of factor, α, lies between 0 and 1, that is, $\alpha \in (0,1)$.

Morestill, we assume the growth of this hypothetical economy follows an overlapping generation framework with two periods and that each firm have access to an inheritance which give them initial capital, K_0, and firms hold capital stock of K_1 at

period 1. Thus, the total capital stock of the firm consists of $(K_0 + K_1)$. This also applies to labour employed.

Equation (1) becomes;

$$Y_t = A * \left[K_0 + K_1\right]^{\alpha} * \left[L_0 + L_1\right]^{1-\alpha} \quad (2)$$

Generalizing the total production of firms in the economy over two periods transforms *Equation (2)* to become *Equation (3),* and *Equation (4)* is in a more compact form. The operator (*) denotes multiplication.

$$Y_t = A * \sum_{t=1}^{2} K_t^{\alpha} * \sum_{t=1}^{2} L_t^{1-\alpha} \quad (3)$$

$$Y_t = A * \sum_{t=1}^{2} \left[K_t^{\alpha} * L_t^{1-\alpha}\right] \quad (4)$$

Assume technical progress is influenced by external factors that are driven by unique socio-economic events in an economy, and the effect of such influence is known, represented by β. Placing this weight on the technical progress factor makes *Equation (4)* to become:

$$Y_t = A^{\beta} * \sum_{t=1}^{2} \left[K_t^{\alpha} * L_t^{1-\alpha}\right] \quad (5)$$

Where: β represents external factors that influence the level of technological progress.

From here, we decompose capital, *K*, and labour, *L*, in line with their dynamics in a typical economy. The dynamics of *K* stock at time t depends on accrued savings (which is a function of interest rate) and current labour income. The dynamics of *K* is given in *Equation (6),* and generalising to entire economy yields *Equation (7):*

$$K_t = s_t(r_{t-1})\, L_t\, W_t \quad (6)$$

Thus, for the whole period:

$$\sum_{t=1}^{2} \left[K_t\right]^{\alpha} = S_t * R_{t-i} * L_t * W_t \quad (7)$$

Note that because savings in period *t* depend on labour income in that period and on interest rate on capital that savers expect in the previous period, *Equation (7)* can enter the output function to give *Equations (8) and (9).*

$$Y_t = A^{\beta}\left[S_t * R_{t-i} * L_t * W_t\right]^{\alpha} * \sum_{t=1}^{2} L_t^{1-\alpha} \tag{8}$$

$$Y_t = A^{\beta} * S_t^{\alpha} * R_{t-i}^{\alpha} * L_t^{\alpha} * W_t^{\alpha} * \sum_{t=1}^{2} L_t^{1-\alpha} \tag{9}$$

Assume that the supply of human capital grows at a constant rate such that the labour growth relationship is of the form:

$$L_t = (1+n) * L_{t-1} \tag{10a}$$

Aggregating *Equation (10a)* yields

$$\sum_{t=1}^{2} L_t = (1+n) * L_t \quad \approx L_t^{(1+n)} \tag{10b}$$

Substitute *Equation (10b) to (9)*;

$$Y_t = A^{\beta} * S_t^{\alpha} * R_{t-i}^{\alpha} * L_t^{\alpha} * W_t^{\alpha} * \left[L_t^{(1+n)}\right]^{(1-\alpha)} \tag{11}$$

Rearrange *Equation (11);*

$$Y_t = A^{\beta} * S_t^{\alpha} * R_{t-i}^{\alpha} * W_t^{\alpha} * L_t^{\alpha(1+n)} * L_t^{(1+n)(1-\alpha)} \tag{12}$$

$$Y_t = A^{\beta} * S_t^{\alpha} * R_{t-i}^{\alpha} * W_t^{\alpha} * L_t^{\alpha(1+n)} * L_t^{(1+n)} * L^{-\alpha(1+n)} \tag{13}$$

Ignoring $\dot{t}$ as all firms in this hypothetical economy possess equal life span (2 periods), thus $\dot{t} = 0$. *Equation (13)* can be re-written as:

$$Y_t = A^{\beta} * S_t^{\alpha} * R_t^{\alpha} * W_t^{\alpha} * L_t^{(1+n)} \tag{14}$$

Furthermore, we assume that *technical progress (A)* is driven only by the activities of the financial system, especially policies of financial reforms[23] in this hypothetical economy. The functional form expression is represented in *Equation (15)*, That is:

$$A_t = f_{\mu}\left[FinR\right] \tag{15}$$

[23] Some theorists like Newlyn and Avramides, (1977) believes that financial sector can be ranked *pari passu* with other numerous inputs in the production process.

Where: *FinR* are the specific *financial sector reform* measures and policies.

Substitute *Equation (15)* into *Equation (14);*

$$Y_t = [FinR_t]^{\beta} * S_t^{\alpha} * R_t^{\alpha} * W_t^{\alpha} * L_t^{(1+n)} \quad (16)$$

$$Y_t = FinR_t^{\beta} * S_t^{\alpha} * R_t^{\alpha} * W_t^{\alpha} * L_t^{(1+n)} \quad (17)$$

We introduced superscript *i* to the dependent variable, Y, in *Equation (17)* to capture several possible measures of macroeconomic outcomes. This becomes *Equation (18)*. Economic performance is measured by the real GDP per capita, gross capital formation, macroeconomic instability (captured by the misery index) and human development. Thus,

$$Y_t^i = FinR_t^{\beta} * S_t^{\alpha} * R_t^{\alpha} * W_t^{\alpha} * L_t^{(1+n)} \quad (18)$$

Taking the logarithmic value of both sides of *Equation (18),* yields *Equation (19)*

$$InY_t^i = \beta_1 In(FinR_t) + \alpha_1 In(S_t) + \alpha_2 In(R_t) + \alpha_3 In(W_t) + \alpha_4 (1+n) In(L_t) \quad (19)$$

Transforming the human capital component [$\alpha_4 (1+n) In(L_t)$] further so that changes in labour in this hypothetical economy is assumed constant, suggesting that labour demand and supply is relatively constant overtime, such that growth in labour, *n*, tends to zero in the limit; that is *[/n=0]*. Then, *Equation (19)* becomes:

$$InY_t^i = \beta_1 In(FinR_t) + \alpha_1 In(S_t) + \alpha_2 In(R_t) + \alpha_3 In(W_t) + \alpha_4 In(H_t) \quad (20)$$

Changing *Equation (20),* a deterministic model, to an econometric model by including a constant and error term, yields *Equation (21).* Further, the respective coefficients in *Equation (20)* are represented by α for purpose of uniformity, and rearranged, yielding *Equation (21).*

$$InY_t^i = \alpha_0 + \alpha_1 In(FinR_t) + \alpha_2 In(S_t) + \alpha_3 In(R_t) + \alpha_4 In(W_t) + \alpha_5 In(H_t) + \varepsilon_t \quad (21)$$

Where: InY_t^i represents economic performance variables; comprising real per capita GDP, gross capital formation; human development and macroeconomic instability;

$In(FinR_t)$ captures policies of financial sector reform and is derived by constructing an index that captures financial policy changes in each of the 14 sampled SSA countries. Financial reforms is expected to have a positive effect on all economic performance metrics for it to be considered successful, with the exception of variable to capture macroeconomic instability, where the coefficient is expected to be negatively sign; $In(S_t)$ is the growth of national savings; $In(R_t)$ is interest rate related variables at time *t;* $In(W_t)$is growth in wealth-related variables, like income distribution and public sector (fiscal) dominance; and $In(H_t)$ is human capital measured at time *t*.

Therefore, *Equation (21)* becomes the fundamental equation for this study; and forms the underlying framework on which subsequent estimations, analysis and discussions are based. The entire study can aptly be broken down into three (3) distinct parts, namely (i) Effects of financial reforms on financial development in SSA; (ii) Effects of financial reform on economic performance in SSA; and (iii) The causal link among financial reform, financial development and economic performance in SSA. We include relevant variables in the fundamental model based on data-availability and prescriptions by the extant literature.

4.3 Methodology, Model Specification and Estimation Techniques

Based on the theoretical framework, the model specification for each of the objective of this study are discussed and presented below.

4.3.1 Modelling the effects of financial sector reforms on financial sector development in SSA.

To assess this relationship, the study used the system Generalized Method of Moments (sGMM) estimator proposed by Arellano and Bover, (1995) and Blundell and Bond, (1998). Unlike the OLS estimator, the GMM coefficients are unbiased in the presence of lagged endogenous variables even when the sample size *t* is small. Thus, the dynamic panel model for estimating the impact of financial reform on financial development is specified in *Equation (22a).*

$$FIND_t = \alpha_0 + \alpha_1 In(FIND_{t-i}) + \alpha_2 In(FINR_{it}) + \alpha_3 In(MACRO_{it}) + \alpha_4 In(INST_{it}) + \varepsilon_t \quad (22a)$$

Where: *FIND*, the dependent variable, is financial development and captured by the ratio of private credit to GDP[24], and is often used to measure the extent of bank intermediation to the private sector. Denizer, Syigun and Owen (2000), for example, hinted that the private credit/GDP reflects the key function of the financial sector, which is to channel funds from savers to private investors. Others like, Beck, Levine and Loayza, (2000); Tressel and Detragiache, (2008) use the private credit/GDP ratio because it shows the extent to which the private sector relies on the financial system for funds, and also because the measure excludes credit to the public sector.

Our main explanatory variable is the financial sector reform *(FINR)*, and the study computes domestic banking reforms[25] from financial reform database developed by Abiad et. al., in 2010, but excludes capital account and securities market liberalisation. Thus, this study focuses on ascertaining the effects of domestically-induced financial reform (that is, domestic banking sector reform) on financial development and economic performance. Our choice of analysis is sequel to that fact that financial systems in most SSA countries are predominantly bank-based. Macroeconomic factors *(MACRO)*, is represented by real *GDP* per capita, inflation *(INF)*, current account deficit and government consumption expenditure *(GCE)*, while natural resource rent *(NRES)* was used in the study to capture institution and structure of economic arrangements. The *'i's* and *'t's* represent individual country and timeframe, respectively.

This study also analyses the effects of each of the individual components of financial reforms on financial development using data for the 14 sampled SSA countries. In this case, the specified model is given in *Equation (22b).*

$$\left(FIND_{i,t}\right)=\begin{pmatrix}\beta_{0i,t}\\ \beta_{0i,t}\\ \beta_{0i,t}\\ \beta_{0i,t}\\ \beta_{0i,t}\\ \beta_{0i,t}\\ \beta_{0i,t}\end{pmatrix}+\begin{pmatrix}\beta_{1i,t} & 0 & 0 & 0 & 0 & 0 & 0\\ 0 & \beta_{2i,t} & 0 & 0 & 0 & 0 & 0\\ 0 & 0 & \beta_{3i,t} & 0 & 0 & 0 & 0\\ 0 & 0 & 0 & \beta_{4i,t} & 0 & 0 & 0\\ 0 & 0 & 0 & 0 & \beta_{5i,t} & 0 & 0\\ 0 & 0 & 0 & 0 & 0 & \beta_{6i,t} & 0\\ 0 & 0 & 0 & 0 & 0 & 0 & \beta_{7i,t}\end{pmatrix}\begin{pmatrix}RR_{i,t}\\ IRC_{i,t}\\ EB_{i,t}\\ BS_{i,t}\\ PR_{i,t}\\ CAL_{i,t}\\ SEM_{i,t}\end{pmatrix}+\begin{pmatrix}\varepsilon_{1i,t}\\ \varepsilon_{2i,t}\\ \varepsilon_{3i,t}\\ \varepsilon_{4i,t}\\ \varepsilon_{5i,t}\\ \varepsilon_{6i,t}\\ \varepsilon_{7i,t}\end{pmatrix} \quad ...(22b)$$

[24] Private credit-to-GDP is preferred to other measures of financial development in most influential studies (see Demetriades & Hussein, 1996; Benhabib & Spiegel, 2000; Tressel and Detragiache, 2008).

[25]The exclusion is against the backdrop that the reform index by Abiad, et al (2010) is mainly focused on policy changes affecting the banking sector, and also since the banking system remains at the core of the financial sector in most developing countries, SSA inclusive (Tressel & Detragiache, 2008).

Where: *FIND*, the dependent variable, is financial development; captured by the ratio of private credit/GDP as discussed earlier. The explanatory variables are the seven (7) respective individual components of the financial sector index, and these include, directed credit/ reserve requirements *(RR)*, interest rate controls *(IRC)*, entry barriers/ pro-competition measures *(EB)*, banking supervision/ regulation *(BS)*, privatization *(PR)*, capital account liberalisation *(CAL)* and policies on security markets *(SEM)*.

4.3.2 Modelling the effects of financial sector reform on economic performance in SSA.

To effectively evaluate our second (2) objective, this study carried out the analysis in two different approaches to enhance understanding of how financial reform influences economic performance in SSA. This was achieved by aggregating and disaggregating financial reform variable. The aggregated financial reform variable was derived by taking a simple summation of five out of the seven components of the index, namely credit controls/ excessively high reserve requirements; interest rate controls; entry barrier; state ownership in the banking sector, and lastly, prudential regulation and banking supervision, excluding capital account liberalisation and securities market policy. The reason for this is because this study focuses on ascertaining the effects of domestic banking sector reform on economic performance in SSA. On the other hand, the disaggregated financial reform variable is each of the individual components of financial reforms used in modelling.

Firstly, the estimated model with individual (disaggregated) components of the financial reform (FINR) index is specified in Equation (23) while a condensed form of the relationship is expressed in Equation (24).

$$\begin{pmatrix} RGDP_{i,t} \\ GCF_{i,t} \\ HDI_{i,t} \\ MINDEX_{i,t} \end{pmatrix} = \begin{pmatrix} \beta_{0i,t} \\ \beta_{0i,t} \\ \beta_{0i,t} \\ \beta_{0i,t} \\ \beta_{0i,t} \\ \beta_{0i,t} \\ \beta_{0i,t} \end{pmatrix} + \begin{pmatrix} \beta_{1i,t} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & \beta_{2i,t} & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & \beta_{3i,t} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \beta_{4i,t} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & \beta_{5i,t} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & \beta_{6i,t} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & \beta_{7i,t} \end{pmatrix} \begin{pmatrix} RR_{i,t} \\ IRC_{i,t} \\ EB_{i,t} \\ BS_{i,t} \\ PR_{i,t} \\ CAL_{i,t} \\ SEM_{i,t} \end{pmatrix} + \begin{pmatrix} \varepsilon_{1i,t} \\ \varepsilon_{2i,t} \\ \varepsilon_{3i,t} \\ \varepsilon_{4i,t} \\ \varepsilon_{5i,t} \\ \varepsilon_{6i,t} \\ \varepsilon_{7i,t} \end{pmatrix} \quad \ldots(23)$$

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \beta_{0i,t} + \sum_{l=1}^{L=7} \beta_{li,t} * FINR_{i,t} + \eta_i + \varepsilon_{li,t} \quad \ldots \quad (24)$$

Where: *ECPIs* is the economic performance indicators (ECPI), comprising *RGDP* (real per capita GDP), *GCF* (gross capital formation); *HDI* (human development index) and *MINDEX* (misery index to evaluate whether financial reform generate macroeconomic instability or not); *FINR* is the variable representing the sets of seven financial sector reform index in an aggregated form; η_i measure the country-specific effects, ε is the error term that captures the unobservable panel effect, while the *'i's* and *'t's* represent individual country and time frame, respectively.

Equations (23) and (24) are the estimated models to investigate the second objective of this study. *Equation (23)* represents the matrix representation of the individual financial reform components, while *Equation (24)* is the reduced form equation. The explanatory variables in *Equation (23)* are the 7x1 matrix of the intercept, the 7 x 7 coefficient matrix of financial sector reform (FINR) components, the 7 x 1 vector of reform categories and the vector of error terms. The specification including the control variables is presented in *Equation (25a).*

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \beta_{0i,t} + \sum_{l=1}^{L=7} \beta_{li,} FINR_{i,t} + \beta_8 NRES_{i,t} + \beta_9 INF_{i,t} + \beta_{10} SSE_{i,t} + \beta_{11} GCE_{i,t} + \beta_{12} RIR_{i,t} + \eta_i + \varepsilon_{li,t} \quad \ldots\ldots\ldots\ldots\ldots\ldots (25a)$$

Thus, in aggregative form, *Equation (25a)* now transform to *Equation (25b).*

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \beta_{0i,t} + \sum_{l=1}^{L=7} \beta_{li,t} FINR_{i,t} + \sum_{l=1}^{L=1} \beta_{li,t} INST_{i,t} + \sum_{m=1}^{M=4} \beta_{mi,t} MACRO_{i,t} + \eta_i + \varepsilon_{li,t} \quad \ldots\ldots\ldots (25b)$$

Where: SSE refers to secondary school enrolment rate and used in this study to capture the level of competence in risk management among trained human capital.

Second, and as mentioned earlier, it was possible to use aggregative financial reform index, rather than a vector of reform categories/ dimensions. This approach, which is still consistent with the model specifications above, is also explored in the analysis. The estimated model, using an aggregated financial reform variable (a simple summation of five (5) out of the seven (7) financial reform index), is presented in *Equations (26a)* and *(26b)*

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \beta_{0i,t} + \sum_{l=1}^{L=1} \beta_{li,} FINR_{i,t} + \beta_8 NRES_{i,t} + \beta_9 INF_{i,t} + \beta_{10} SSE_{i,t} + \beta_{11} GCE_{i,t}$$
$$. + \beta_{12} RIR_{i,t} + \eta_i + \varepsilon_{li,t} .....(\ 26a)$$

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \beta_{0i,t} + \sum_{l=1}^{L=1} \beta_{li,t} FINR_{i,t} + \sum_{l=1}^{L=1} \beta_{li,t} INST_{i,t} + \sum_{m=1}^{M=4} \beta_{mi,t} MACRO_{i,t} + \eta_i + \varepsilon_{li,t} \ (26b)$$

4.3.3 Modelling the causal link among financial reforms, financial development and economic performance in SSA.

Prior to the test for causality among financial reform, financial development and the four (4) chosen economic performance metrics, the study follows the three (3) standard procedures proposed by Sims, (1989). First, the test for order of integration in the series was conducted using appropriate techniques for unit-root test in time-series analysis. Second, is to conduct cointegration tests, following Johansen procedure, to ascertain whether there exist long-run relationships among the variables under study. Lastly, the study evaluates the causality test to ascertain the direction of causality amongst the variables in a country-specific Vector Autoregressive (VAR) framework.

Heterogeneous Unit Root Test

Most macroeconomic time series are trended and therefore in some cases are non-stationary. In an attempt to estimate the relationship between financial reform and economic performance in SSA, the first task is to test for the presence of unit root. This is necessary in order to ensure that the parameters are estimated using stationary time series data to avoid the occurrence of spurious results, whether in the panel data estimation or country-specific causality test analysis.

A number of such tests have appeared in the literature and the most popular ones include: simple Dickey-Fuller (DF) test (1979, 1981), Augmented Dickey Fuller (ADF) test and Phillips and Perron, PP (1988). In these classes of unit root tests, the Augmented Dickey Fuller Statistics developed by Dickey and Fuller, (1979) is considered more robust. The ADF statistics is preferred over PP test (Philips and Perron, 1988) because it is more reliable and superior for time series with autoregressive structure as it enhances white noise residuals in the regression (Dejong

et al., 1992 and Poshakwale, 2006). ADF test will be applied on all variables at their levels and first difference, and the test differ from the simple DF test due to the inclusion of an extra lagged terms of the dependent variable in order to eliminate autocorrelation, as error term is unlikely to be white noise. The ADF test procedure begins by examining the optimal lag length using Akaike's Final Prediction Error (FPE) criteria, before proceeding to identify the probable order of stationarity. The essence of the ADF tests is the null hypothesis of nonstationarity. To reject this, the ADF statistics must be more negative than the critical values and significant. However, the ADF test has been found to possess low power in rejecting the null of stationarity, especially for short-spanned data.

Moreover, studies have shown that panel unit root tests have higher power than unit root tests based on individual time series data. There are recently developed tools used to conduct unit root test in panel data analysis, and these include Levin, Lin and Chu, (LLC, 2002); Im, Pasaran and Shin (IPS, 2003); Choi (2001); Hadri (2000); Maddala and Wu, (1999). However, most studies continue to adopt either LLC or IPS procedure because of the fact that both tests are based on the ADF framework. The major drawback of the LLC test is that it restricts the autoregressive coefficients, *p,* for all panel members to be homogeneous across all individual country, but the IPS allows heterogeneity on the coefficients of the variables and proposing as a basic testing procedure one based on the average of the individual unit-root test statistics. It is the assumption of heterogeneity on the coefficient of the variables that makes the application of IPS unit root tests well-suited for cross-sectional data analysis such as this current study. There are seemingly divergences across countries which may be due to differences in socio-economic and political structures, institutional quality, as well as stages of economic development of each country. This study uses the Im, Pasaran and Shin (IPS) heterogeneous panel unit root tests to conduct the stationarity test of variables included in the study since it is known to be more superior to other tests procedures in its class due to the aforementioned reasons.

The null hypothesis of the IPS unit root tests is that all series are non-stationary processes while the alternative hypothesis implies that a fraction of the series in the panel or all of variables assumed to be stationary. This is in sharp contrast with the LLC test, which presumes that all series are stationary under the alternative hypothesis.

Ho: p; = 0 for all i

H_1: $p < 0$ for at least one i

The IPS statistic for testing for unit roots in panel data analysis is given by:

$$t_{IPS} = \frac{\sqrt{N}\,(t - bar - {}^{1}/_{N} \sum_{i=1}^{N} E[t_{iT} : \rho_i = 0])}{\sqrt{Var\,(t_{iT} - bar : \rho_i = 0)}} \quad \text{---} \quad (27)$$

IPS has been proved in models that the constructed t-value follows the standard normal distribution as T tends to infinity followed by N tending to infinity sequentially. IPS is particularly appropriate for a data-set like ours with a moderate number of cross-sectional units over a relatively long period of time. It is also appropriate for our dynamic heterogeneous panel data because it allows for heterogeneity across countries such as individual-specific effects and unique patterns of residual serial correlations.

Heterogeneous Cointegration Test

The test of cointegration is the second step after ascertaining the existence of unit root, and this step involves investigating the existence of a long-run relationship amongst economic variables. According to Asteriou and Hall, (2007), if the variables are cointegrated, they move together overtime so that any disturbances in the short-run will be corrected overtime. This indicates that if two or more variables are cointegrated in the long-term, they may drift at random from each other in the short run, but will ultimately return simultaneously to equilibrium in the long run.

There are different possible tests for cointegration in time series data, and the best-known cointegration tests are based on the Engle and Granger cointegration framework. In time-series analysis, the remarkable outcome of the Engle-Granger, (1987) procedure is that if a set of variables are cointegrated, then there exist always an error-correcting formulation of the dynamic model, and vice versa. Their analysis consists of a standard Augmented Dickey-Fuller (ADF) test on the residuals, U_t under the null hypothesis, $H_{0,}$ that the variables are not cointegrated, versus the alternative, $H_{a,}$ that the variables are cointegrated. If we observe that the ADF statistic is less than the appropriate critical value, we reject the H_0 that there are no cointegrating relationships between the variables. The Engle-Granger procedure can also be used

for the estimation of either heterogeneous or homogeneous panels, under the hypothesis of a single cointegrating vector.

However, the Engle-Granger (EG) procedure suffers from various shortcomings. One is that it relies on a two-step estimator; the first step is to generate the error series and the second is to estimate a regression for this series in order to see if the series is stationary or not. Hence, any error introduced by the researcher in the first step is automatically carried into the second step, especially any misspecification in modelling the short-run dynamics. Also the technique breaks down where more than one cointegrating relationship is possible. The Johansen (1988) maximum likelihood method circumvents the use of two-step estimators and serious problems that cannot be resolved by the EG single-equation approach. Therefore, an alternative to the EG approach is the Johansen approach for multiple equations and where multiple cointegrating vectors exists. The Johansen, (1988) test also allows us to test restricted versions of the co-integrating vectors and the speed of adjustment of parameters. Thus, we will test for co-integration using the Johansen method for individual countries cointegration tests before conducting the causality analysis. The testing procedure starts with $r = 0$. If this hypothesis is rejected, and then $r = 1$ is tested. This sequential procedure continues until the null is not rejected or the hypothesis r = ρ - 1 is rejected. If the hypothesis of $r = 1$, is accepted, this shows that there is, at most, one cointegrating relationship.

Pedroni (1997, 1999 and 2000) proposed several tests for cointegration in panel data models that allow considerable heterogeneity. The good features of Pedroni's tests are the fact they allow for multiple regressors, for the cointegration vector to vary across different sections of the panel, and also for heterogeneity in the errors across cross-sectional units. The panel regression model that Pedroni proposes is of the following form:

$$Y_{i,t} = a_i + \delta_t + \sum_{m=1}^{M} \beta_{mi} X_{mi,t} + u_{i,t} \qquad \text{---} \qquad (28)$$

The Pedroni test proposes seven different cointegration statistics to capture the ‘within’ and ‘between’ effects in his panel data analysis. The test can be classified

into two main categories. The first category includes four tests based on pooling along the 'within' dimension, that is pooling the autoregressive (AR) coefficients across different sections of the panel for the unit root test on the residuals. These are panel v statistic, panel p statistic, panel t statistic (non-parametric) and panel t statistic (parametric). The second category includes three tests based on pooling the 'between' dimension. This involves averaging the AR coefficients for each member of the panel for the unit root test on the residuals. These include group p statistic (parametric), group t statistic (non-parametric) and the group t statistic (parametric).

Test for Causality

The causality test among financial sector reform, financial sector development and chosen economic performance indicators is conducted using a multivariate Vector Autoregressive (VAR) modelling approach developed by Sims, (1989). Sims, (1989) argued that VAR models are more powerful when ascertaining the interrelationships among more than two (2) time series variables. The VAR framework is also believed to be robust for obtaining consistent forecasts, compared to the bi-variate granger causality test. Causality, thus exist, in the long-run only when the coefficient of the cointegrating vector is statistically significant and different from zero (Granger and Lin, 1995). The general form of a VAR framework is presented in *Equation (29)* and the condensed form in *Equation (30).*

$$\begin{bmatrix} Y_{1t} \\ Y_{2t} \\ Y_{3t} \end{bmatrix} = \begin{bmatrix} C_1 \\ C_2 \\ C_3 \end{bmatrix} + \begin{bmatrix} \alpha_{11} & \alpha_{12} & \alpha_{13} \\ \alpha_{21} & \alpha_{22} & \alpha_{23} \\ \alpha_{31} & \alpha_{32} & \alpha_{33} \end{bmatrix} * \begin{bmatrix} Y_{1t-i} \\ Y_{2t-i} \\ Y_{3t-i} \end{bmatrix} + \begin{bmatrix} \varphi_{1t} \\ \varphi_{2t} \\ \varphi_{3t} \end{bmatrix} \quad \ldots \quad (29)$$

$$Y_t = C + \phi_1 * Y_{t-1} + \cdots + \phi_3 * Y_{t-3} + \varphi_t \quad \ldots \quad (30)$$

The estimated VAR model in this study is given in *Equation (31)*

$$\left.\begin{aligned} ECPI_t &= \gamma_0 + \sum_{i=0}^{m} \gamma_{1,i} \Delta FIND_{t-i} + \sum_{j=0}^{n} \gamma_{2,j} \Delta FINR_{t-j} + \mathrm{E}_t \\ FIND_t &= \psi_0 + \sum_{i=0}^{m} \psi_{1,i} \Delta ECPI_{t-i} + \sum_{j=0}^{n} \psi_{2,j} \Delta FINR_{t-j} + \Theta_t \\ FINR_t &= \mu_0 + \sum_{i=0}^{m} \mu_{1,i} \Delta FIND_{t-i} + \sum_{j=0}^{n} \mu_{2,j} \Delta ECPI_{t-j} + \Xi_t \end{aligned}\right\} \quad (31)$$

Where: *ECPI* represents measures of economic performance employed in the study, namely real per capita GDP, gross capital formation, macroeconomic misery (instability) and human development. *FIND* is the financial development variable included in the study; *FINR* is the financial sector reform index, and *'m'* and *'n'* are the lag length, E, Θ, Ξ are the residuals which are assumed to be uncorrelated, and with zero mean and finite variance-covariance matrix.

Variance Decomposition and Impulse Response Function

The study generates the model's variance decomposition and impulse response functions from the empirical results, as both analyses capture the dynamic interactions among variables. The variance decomposition analysis enhances the knowledge of the relationship between several variables in the VAR framework because it relates to the question of how useful one variable (or sets of variables) is for forecasting another variable (or set of variables). In essence, the variance decomposition is a technique which show the percent of the variation in one variable that is explained by innovations (shocks) of another variable over a given time horizon. From observation of most macroeconomic data, own trend shocks often explains most of the error variance in the short run, but often expected to decline, as the lagged values of a variable increases in the VAR system. This will mean that the percentage effect explained by other variables will rise, as the lag increases over the time horizons.

A key consideration is the importance of ordering of variables when conducting the tests, as the error terms of the equations in the VAR system may correlate. Hence the result will be dependent on the order in which the equations are estimated in the overall framework. For this study, the Cholesky ordering is financial sector reforms, financial sector development (proxy by private sector credit as a percentage of GDP), real per capita GDP, gross capital formation (GCF), variable to represent economic misery and human development. The analysis of variance decomposition increases the understanding of interdependence that exists among the variables, and hence broadens the scope and effectiveness of policy formulation and implementation, especially when a shock (innovation) in a particular indicator is effectively explained by one or more variables in the system. Hence, that variable becomes a vital instrument to consider in an attempt to influence the target indicator.

The impulse response function, on the other hand, describe the reaction of one variable to the innovations in another variable in the system, while holding all other shocks equal to zero. Therefore, the impulse response function traces the effect of one-standard deviation shock or a time profile to the effect of shock in a variable on current and the expected future values of the variables. The difference between impulse response function and variance decomposition is that, while the former traces an effect of a shock to one endogeneous variable on to the other variables in the system, the later method separates the variance of the forecast error for each variable into components that can be attributed to each endogeneous variable in the system (Enders, 1995). Here, this study reports only the results obtained from variance decomposition analysis.

4.4 Estimation Techniques

The first empirical model *(Equation 22)* is estimated using the system GMM estimator in an Autoregressive Distributed Lagged framework. We estimated the second empirical models in *Equations (23)* and *Equation (24),* respectively using dynamic panel data methodology. In all empirical analysis, were possible, we conducted analysis and presented results obtained using the traditional panel methodology, namely fixed- and random-effects modelling. The dynamic panel addresses the potential issue of endogeneity in data and follows approaches developed and adopted by Blundell and Bond, (1998), and more recently, Levine, et al., (2000); Beck, et al., (2000). If the country or individual specific effects, η_i, are uncorrelated with the explanatory variables in the models, that is, η_i is orthogonal to all the explanatory variables, $E(X_{it}, \eta_i) = 0$, the pooled OLS estimation can be applied to fit the model as the individual effect has no specific impact on the estimates and thus, no error of measurement in variables. However, if there is a strong correlation between the unobserved country effects component, η_i and the explanatory variables of the model, that is $E(X_{it}, \eta_i) \neq 0$, then the pooled OLS estimator would be biased and inefficient. In this case, the fixed-effect model can be adopted to generate the parameters of the model. In the situation where the standard random effects assumption holds and the model contains country-effect, the random-effects model is

specified and estimated. The choice between the fixed and random effects methods depends on several selections tests.

The study uses the Hausman specification[26] test to select between the fixed-effects and random-effects models. According to Ahn and Moon, (2001), the Hausman statistic may be viewed as a distance measure between the fixed effects and the random effects estimators. Thus, we test null hypothesis, H_0, that random effects are consistent and efficient, versus H_1, the alternative hypothesis, that random effects are inconsistent (as the fixed effects will be assumed always consistent).

However, the dynamic version of *Equation (26)* with lagged dependent variable is formulated as follows:

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \beta_{0i,t} + \sum_{k=1}^{K=4} \beta_{ki,t} ECPI_{i,t-1} + \sum_{l=1}^{L=7} \beta_{li,t} FINR_{i,t} + \sum_{m=1}^{M=4} \beta_{mi,t} MACRO_{i,t} + \eta_i + \varepsilon_{li,t} \quad (32)$$

$$\sum_{k=1}^{K=4} ECPI_{i,t} = \gamma_0 + \sum_{k=1}^{K=4} \gamma_{ki,t} ECPI_{i,t-1} + \sum_{g=1}^{G=5} \gamma_{gi,t} FINR_{i,t} + \sum_{m=1}^{M=4} \gamma_{mi,t} MACRO_{i,t} + \eta_i + \varepsilon_{i,t} \quad \ldots(33)$$

Equations (32) and *(33)* are general specifications for objective two (2). This is the dynamic form of *Equations (26).* $ECPI_{i,t-1}$ is one-period lag value of the dependent variables, included as regressor and instrumental variables in each of the models. It is assumed that the one-period lagged dependent variable is not serially correlated with the error term.

Studies have established that if the dependent variable is persistent overtime, then the lagged values of the variable would be biased, and consequently perform poorly when employed as instruments using the difference GMM estimator (see Blundell, Bond and Windmeijer, (2000). System Generalized Method of Moments (GMM) is better suited to study such as this because it is more robust for missing data, accounts for simultaneity bias and reverse causality, and also when lagged values of the dependent variable enters the equation as instrument, instead of explicitly as regressors. This is unlike the OLS, fixed-effects, random-effects, and sometimes difference GMM approach in extant studies. However, the assumption is that GMM coefficient estimates are unbiased in the presence of lagged endogenous variables even when the

[26]When the value of the statistic is large, the null hypothesis is rejected indicating that there is no correlation between the individual specific-effects and the explanatory variables, and hence settle for fixed-effects. Otherwise, the random-effects method of estimation becomes relevant for analysis.

number of observation is small. Following Blundell and Bond (1998), the study adopts two specification tests. First is a test for second order serial correlation of error term, second, the Sargan test of over-identification restriction. The Sargan test is a test of the validity of instrumental variables It is a test of the over-identifying restrictions. The hypothesis being tested with the Sargan test is that the instrumental variables are uncorrelated to some set of residuals, and therefore they are acceptable, healthy, instruments. If the null hypothesis is confirmed statistically (that is, not rejected), the instruments pass the test; they are valid by this criterion.

We analysed the third objective *(Equation 31)* using the Multivariate Vector Autoregressive *(MVAR)* framework. Studies have suggested that an efficient method for testing causality among variables is through the VAR model framework, and not granger causality (see Toda and Phillips, 1993; Hall and Wicksens, 1993; Hall and Milne, 1994). The MVAR process avoids all problems associated with structural equation modelling, as identification and endogeneity problems become insignificant. The unrestricted VAR framework (Sims, 1980) shall be employed with auxiliary estimations, such as variance decomposition, impulse response and VAR causality. Gujarati, (1995) highlighted that the VAR model is a truly simultaneous system in that all variables are regarded as endogenous considering the feedback effects in the system, and that it can be estimated by OLS without resorting to any system methods, such as two-stage least squares (2SLS). Although, VAR modelling has some unresolved issues in the literature, notably the issue of lacking proper theoretical underpinning, but the approach is very useful in ascertaining long-term relationship and forecasting, since it avoids simultaneity bias. Based on these associated issues, the study employs the Akaike information criterion (AIC) and Schwarz Bayesian criterion (SBC) for lag length selection. Specification problem is resolved using the unrestricted VAR framework which reduces the danger of endogeneity. All of these corrective measures are geared towards obtaining results that will be robust for analyses and policy implication.

4.5 Normality Tests

This study also computed the descriptive statistics, including correlation analysis and normality test. For the latter test and since correlation test assumes normal distribution of dataset, it is vital to ascertain the extent to which the data series approximates a

normal distribution. Normality tests were performed using the skewness, the kurtosis and the Jarque-Bera statistic. Skewness measures how symmetrical the distribution is around its mean. The skewness of a symmetric distribution, such as the normal distribution, is zero. Kurtosis, on the other hand, is a measure of the peakedness or flatness of the data series. The kurtosis of the normal distribution is 3. If the kurtosis exceeds 3, the distribution is peaked (leptokurtic) relative to the normal; if the kurtosis is less than 3, the distribution is flat (platykurtic) relative to the normal. The Jarque-Bera (JB) statistic tests is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. The test statistic measures the difference of the skewness and kurtosis of the series with those from the normal distribution. The test statistic is computed as:

$$JB = \frac{N-k}{6}\left(S^2 + \frac{1}{4}(K-3)^2\right) \tag{34}$$

Where: S is the skewness, K is the kurtosis, and k represents the number of estimated coefficients used to create the series. The observed probability is the possibility that a Jarque-Bera statistic exceeds (in absolute value) the observed value under the null hypothesis of normal distribution; such that a small probability value leads to the rejection of the null hypothesis of a normal distribution. Therefore, we accept H_0 that there is no difference between our distribution and a normal distribution

4.6 Variables and Data Description

The variables employed in this study, as well as their expected a priori expectations are described as follows.

1) Financial Sector Reform

To measure domestic financial reforms, we use an index derived from the database of Abiad et al., (2010), which covers 91 countries. The index is the normalized sum of seven (7) sub-indexes that tracks the presence of restrictions, and consequently extent of liberalisation. The seven dimensions of financial sector policy in the index are described as follows: (i) *Credit Controls and Excessively High Reserve Requirements (RR) index* track the possibility of limit on expansion in credit supply. (ii) *Interest Rate Controls (IRC)index* assess whether domestic deposit and lending rates are market determined, rather than subject to administrative ceilings/controls. (iii) *Entry*

Barrier (EB) index measures extent of restriction on entrance into the banking sector, including both domestic and foreign banks. This index also captures whether there is restrictions relating to branch network and scope of activities. (iv) *State ownership in the banking sector (Bank privatization, BP) index* measures the extent to which bank assets are controlled by the private sector, rather than the government. The index also covers direct control of banks through nationalisation, especially after periods of financial crisis. (v) *Prudential regulation and banking supervision (BS) index* tracks the degree of independence of supervisory agency and the effectiveness of monetary authority in conducting 'on-site' and 'off-site' banking sector inspection and examination. Of all dimensions of financial sector reform, index of bank supervision requires greater involvement of government in creating a stable financial system. The other components include policy to develop the securities market, as well as policy relating to financial account openness (capital account liberalisation).

Each sub-index is coded on a four-point scale, and is normalized between zero and one. In each category, a higher score corresponds to more advanced level of financial liberalisation. Meanwhile, we expect financial reform to favourably (that is, positively) promotes broad-based socio-economic development, including growth in real per capita GDP, gross capital formation, human development, while also dousing occurrence of macroeconomic uncertainties in perceptive countries.

There are proliferations of financial reforms measures in extant literature. One of such measure is the use of real interest rate[27]. This measure is often used to proxy financial liberalisation or financial repression (see for example, Gelb, 1989; Arestis and Glickman, 2002; Ang and McKibbin, 2007). Another is the use of liquid-liabilities[28] as a percentage of GDP as a proxy for financial liberalisation. These studies include King and Levine, (1993a); Dematriades and Hussain, (1996); Rousseau and Wachtel, (1998); Benhabib and Spiegel, (2000); Ang and McKibbin, (2007). The overarching superiority of analysis in this study stems from the use of the financial reform index developed by Abiad, et. al., (2010) as the index traces gradual process of reforms along broader dimensions, and not just the use of monetary aggregates as proxy for financial reform, like in extant studies.

[27]The idea is that a positive real interest rate indicates a country that has a liberalised the financial sector, while a negative real interest rate connotes existence of financial repression.

[28] Employed in most recent empirical studies as proxy for financial intermediation

Financial reform can be classified broadly into two, namely, internal liberalisation: involves the decontrols of interest rate and government interventions, especially in the domestic financial economy. External liberalisation covers capital account liberalisation and policy on securities market to increase foreign participation in the domestic financial sector. To measure financial reform in this study, we took a simple arithmetic average of the first five (5) dimensions of financial reform. These include *credit controls and excessively high reserve requirements; interest rate controls; entry barrier; state ownership in the banking sector, and lastly, prudential regulation and banking supervision*. Thus, the emphasis of this study is to explore the impact of domestically-induced policy of financial reform on financial sector development and economic performance, as well as the interrelationship amongst them.

2) Financial Development Variables

a) **Financial deepening *(FD):*** This is the ratio of broad money to GDP **(M2/GDP)**. A high ratio connotes more depth of the financial system intermediation, and is expected to positively raise economic performance across all frontiers.

b) **Domestic credit to private sector as a percentage of GDP *(CPS):*** This captures actual credit allocated to the private sector of the economy for investment by domestic banking system. CPS reflects a key function of the financial sector being a conduit to channel funds from savers to investors in the private sector. Thus, this measure is more inclusive than other measures of financial development. An increase in the ratio signifies effective allocation of financial resources by financial institutions, which should positively influence real GDP per capita, investment, human development and also promote economic stability through effective risk management.

c) **Interest rate spread *(IRS):*** It is the difference between lending and deposit interest rates (%) of commercial banks. It is often used to show the efficiency and quality of the financial system (see Koivu, 2002). A wide spread negatively affect investment, real per capita income, human development, and also may aggravate economic uncertainties.

d) **Quasi-Liquid Liabilities as a percentage of GDP *(QLL):*** Quasi-liquid liabilities is the sum of currency and deposits in the central bank, plus time

and savings deposits, foreign currency transferable deposits, certificates, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents. We expect a higher degree of QLL to raise economic performance trajectory, while douse economic uncertainties.

e) **Real Interest Rate *(RIR):*** This indicator measures extent of financial liberalization and is calculated by taking the simple average of real deposit and lending rate and then deflating by the inflation rate. It measures anticipated opportunity cost of borrowing in terms of goods and services forgone. Influence of real interest rate on economic performance is uncertain, can either be positive or negative. A high and positive real interest rate may stimulate savings and investment, hence economic growth, but also reduce the level of investment, as higher real interest rate raises cost of funds.

3) **Macroeconomic and Other Control Variables**

a) **Real per capita GDP in constant 2005 US$ *(RGDP):*** Real per capita GDP is used as a measure of average income of each members of the population. Higher level of income per person is expected to positively improve the level of financial sector development, via higher savings mobilisation.

b) **Gross domestic capital formation *(GCF)*** is the addition to the capital stock within the domestic territory of a country during a year. It does not account for the consumption (depreciation) of fixed capital, and also does not include land purchases. Generally, the higher the capital formation of an economy, the faster an economy can grow its aggregate income. Increasing an economy's capital stock also increases its capacity for production, which means an economy can produce more.

c) **Natural resource rent *(NRES):*** This is measured as resource rent flows as a percentage of GDP. NRES reflects natural resource dependence and it used in the study to represent the structure and efficiency of domestic institutions. Natural resources cover coal, oil, gas, solid minerals and forests. Resource rent influence on financial development and economic performance (indicators) is uncertain due to its effect via other transmission processes.

d) **Inflation rate *(INF):*** This is the annual percentage change in the consumer price index and serves as an indicator of macroeconomic stability and the

overall ability of the monetary authorities to manage the economy. We expect higher inflation to negatively affect growth in real per capita income, generate economic uncertainties, and therefore discourage savings (financial development), investment and human development.

e) **Secondary school enrolment *(SSE):*** Secondary school enrolment rate is used to measure human capital development and also improvement in risk management capabilities/talent in the financial system. It is expected that increases in number of risk experts will improve the quality of investments, boost per capita GDP and enhance economic performance in general. This study closely follows Tressel and Detragiache, (2008) in use and interpretation of secondary school enrolment rate as developing competence in risk management expertise.

f) **Government final consumption expenditure as a % of GDP *(GCE):*** This includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditure on national defence and security, but excludes government military expenditures that are part of government capital formation. This variable is used as measure for government intervention and size of public sector in the economy. We expect higher spending to positively stimulate higher level of economic performance, including human development.

g) **Legal origin:** The covers the origin of the legal codes in any particular country and is a reflection of the extant property rights, amidst checks and balance. We expect this variable to favourably influence financial sector development and also exert statistically positive effect on broad based macroeconomic variables employed in the study.

4.7. Data and Sources

The respective time-series data for each of the 14 sampled countries is obtained from the IMF's International Financial Statistics, while as mentioned earlier; the financial sector reform variable is sourced from the new financial sector reform database developed by Abiad, et al. (2010), with some modifications. Data will also be taken from the respective central bank of individual countries included in this study.

CHAPTER FIVE

ESTIMATION AND INTERPRETATION OF EMPIRICAL RESULTS

5.1 Introduction

This chapter presents and discusses the empirical results obtained from the study. First, the study examined whether policies of financial reforms have led to financial sector development in 14 SSA countries. Second, the impact of financial reform on economic performance was also investigated. Lastly, a multivariate causality test for each of the sample countries was conducted to ascertain the nature of association among financial reforms, financial development and economic performance in SSA countries. The presentation and analysis of empirical results are arranged in line with the objectives of the study. Where necessary, we ascertain the impact of financial reforms on financial development and economic performance, using both income-effects[29] and stock market-effects[30] essentially for robustness and sensitivity check. The approach undertaken by this study to account for income-effects and stock market effects involve conducting separate estimations for countries according to their income classifications and availability of domestic stock market, and results obtained compared with estimates from the full-sample.

The 14 countries in our sample spread across three (3) income categories, namely: low-income, lower-middle-income and upper-middle-income economies. The analysis of stock market-effect was carried out by conducting panel data estimation for seven (7) countries with domestic stock exchange out of the 14 countries in our entire sample, while OLS regression analysis was employed each for Nigeria and South Africa to avoid potential size-effects. Estimation using the individual dimensions of policies of financial reforms was also conducted in a bid to fully understand whether similar sets of financial sector policies result in financial development and improved economic performance in SSA countries.

[29] See appendix 8A for income classification of countries in line with IMF groupings.

[30] See appendix 8B for SSA countries with domestic stock market. Three countries namely, Burkina Faso, Côte d'Ivoire & Senegal, were excluded from empirical analysis since they have a common regional stock exchange.

5.2 Descriptive Statistics

Table 5.1a contains the descriptive and normality test statistics for all variables employ in this study while *Table 5.1b* reports the correlation matrix. The results in *Table 5.1a* shows that both mean and median values for all the variables are in line with normal (random) time series trend. The normality test, conducted using the Jarque Bera Statistic, reveal that all the variables are normally distributed. The Jarque Bera Statistics and the respective probability values are reported in *Table 5.1a*. The table shows that all the variables are statistically significant at the 5% level. Hence, we accept the null hypothesis that the error-term follows a normal distribution, thus rejecting the alternative hypothesis.

Additionally, we conducted a trend analysis of key variables employed in this study (see Appendix 1h). From the graph using financial reform data of sampled SSA countries, it can readily be observed that the drive for financial sector reform have been relatively consistent in all the countries, with the exception of Ethiopia. This outcome may explain the positive rise in the trend of credit to the private sector (financial development variable) in most of the countries covered. Thus, suggesting that financial systems in the region have improved on average following over two and half decades of financial reforms in the continent. Moreso, from the figure representing the trend of real per capita GDP growth in SSA, it can be realised that economic growth in most countries is relatively higher in 2010 compare to the growth before adoption of financial reforms measure. Real GDP growth in these countries have however been influenced by occurrence of business cycles overtime. The plot of gross capital formation (domestic investment) and the index measuring macroeconomic instability showed marked volatility, perhaps due to economic structure and institutions of respective countries. The diagram of trend in gross capital formation/GDP in SSA show clear increases in countries like Ghana, Madagascar, Mozambique, Tanzania and Uganda, while Cameroun, Cote d'Ivoire, Kenya, Nigeria and South Africa never reached investment levels attained in the early 1980s. Also, the plot of human development (measured by HDI) clearly indicate some improvements in most SSA which may be consistent with periods these countries step-up drive for financial sector reform to improve financial intermediation.

5.2.1 Analysis of Correlation Results

The correlation result is presented in *Table 5.1b*. The result shows that the relationship among financial reform, ratio of broad money to-GDP (M_2/GDP), ratio of private sector credit-to-GDP and quasi-liquid liabilities/GDP is positive. This suggests that the process of liberalising the financial system correlates favourably well with financial development indicators. Also, financial reform is also positively related to real per capita GDP, gross capital formation and human development, suggesting that reform improves financial depth and output growth. Interest rate spread is negatively correlated with all measures of financial development, but positively correlate with financial reforms, suggesting possible weakness of reform measures so far. Both financial reform and financial development negatively correlate with inflation, but only financial reform has a negative relationship with macroeconomic instability, measured by the misery index. In essence, the existence of strong macroeconomic stabilization policies that enhance price stability in a more competitive banking framework would be beneficial to achieving financial sector development in SSA.

From the results, all the financial development indicators are positively related to each other, and sometimes highly correlated. These indicators include private credit-to-GDP, M2/GDP, quasi-liquid liabilities/GDP and real interest rate. Ratio of private credit-to-GDP is positively correlated with real per capita GDP, government final consumption expenditure (% of GDP), secondary school enrolment and legal structure. Natural resource wealth was found to negatively correlate with real per capita GDP, gross capital formation (GCF), government intervention, secondary school enrolment and all measures of financial development indicators. Thus, financial development may be retarded in countries that are highly dependent on natural resources, indicating resource curse in the financial sector. GCF has a negative correlation with misery index, current account balance, natural resource rent and inflation. A key observation from the correlation analysis reveals that inflation negatively correlates with all the economic performance indicators, including economic misery index and financial reform. Also, government expenditure is negatively correlated with inflation and natural resource rent. This results shows that government intervention is severely affected by inflation, economic environment and presence of natural resources.

Table 5.1a: Descriptive Statistics of Variables and Stationary Tests Results

Details	Mean	Median	Skewness	Kurtosis	Jarque-Bera	Probability	Observations	Im, Paseran and Shin (2003) Unit Root Tests. Stationarity Tests		Remarks
								Value	Probability	
Real Per Capita GDP	849.08	501.04	3.05	11.08	1923.75	0.00	462	-7.446	0.0000	I(1)
Gross Capital Formation	17.96	17.63	0.85	6.17	249.17	0.00	462	-1.668	0.0400	I(1)
Financial reform	1.13	1.00	0.33	1.79	36.72	0.00	462	-6.514	0.0000	I(1)
Human Development Index	0.41	0.41	0.40	3.29	14.02	0.00	462	-8.288	0.0009	I(1)
Economic Misery Index	15.51	9.46	3.96	23.40	9221.91	0.00	462	-5.809	0.0000	I(1)
Quasi-Liquid Liabilities	26.34	23.30	0.45	2.52	20.04	0.00	462	-8.114	0.0000	I(1)
M2/GDP	27.77	24.21	2.80	18.41	5174.11	0.00	462	-8.221	0.0000	I(1)
Real Interest Rate	12.25	10.60	4.76	46.20	37665.17	0.00	462	-15.546	0.0000	I(1)
Private Credit/GDP	24.41	15.81	3.14	13.05	2496.22	0.00	462	-9.313	0.0000	I(1)
Natural Resource Rent	7.69	4.84	2.77	10.40	1565.60	0.00	462	-7.398	0.0000	I(1)
Inflation	13.74	8.11	4.35	28.34	13370.41	0.00	462	-5.435	0.0000	I(1)
Current Account Balance	-0.26	-0.32	3.93	41.36	29520.70	0.00	462	-11.856	0.0000	I(1)
Legal Origin	0.57	1.00	-0.29	1.08	77.13	0.00	462	NA	NA	NA
Government Consumption	13.79	13.25	0.29	2.49	11.01	0.00	462	-3.389	0.0041	I(1)
Secondary School Enrolment	26.44	23.13	1.47	5.50	193.74	0.00	462	-4.718	0.0000	I(1)

Source: Author's Computation

Table 5.1b: Correlation Statistics of Variables Employed

Table 5.1b: CORRELATION STATISTICS																
VARIABLES	**CPS**	**FINR**	**NATR**	**GDPPC**	**INF**	**CAB**	**GCON**	**SSE**	**LEGA**	**GCF**	**RINTR**	**MISR**	**HDI**	**FIND**	**INTRSP**	**QLL**
Private Credit/ GDP (CPS)	**1.00**	0.36	-0.09	0.92	-0.16	-0.25	0.36	0.74	0.19	0.01	0.04	0.08	0.52	0.78	-0.19	0.54
Financial reform (FINR)	0.36	**1.00**	0.07	0.37	-0.21	0.11	0.07	0.43	0.11	0.10	0.14	-0.12	0.36	0.38	0.09	0.20
Natural Resource Rent (NATR)	-0.09	0.07	**1.00**	-0.02	0.11	0.34	-0.38	-0.02	0.20	-0.19	-0.17	0.09	0.01	-0.05	-0.20	-0.08
Real Per Capita GDP (GDPPC)	0.92	0.37	-0.02	**1.00**	-0.11	-0.23	0.23	0.75	0.16	-0.03	-0.05	0.13	0.60	0.60	-0.21	0.42
Inflation (INF)	-0.16	-0.21	0.11	-0.11	**1.00**	0.01	-0.34	-0.04	0.33	-0.21	-0.55	0.95	-0.07	-0.14	0.07	-0.30
Current Account Balance (CAB)	-0.25	0.11	0.34	-0.23	0.01	**1.00**	-0.17	-0.15	0.04	-0.26	0.00	-0.06	-0.07	-0.19	0.00	-0.11
Government Consumption (GCON)	0.36	0.07	-0.38	0.23	-0.34	-0.17	**1.00**	0.16	-0.02	0.27	0.36	-0.27	0.04	0.31	-0.05	0.32
Secondary School Enrolment(SSE)	0.74	0.43	-0.02	0.75	-0.04	-0.15	0.16	**1.00**	0.43	-0.07	-0.18	0.14	0.72	0.62	-0.16	0.51
Legal Origin (LEGA)	0.19	0.11	0.20	0.16	0.33	0.04	-0.02	0.43	**1.00**	-0.12	-0.24	0.38	0.11	0.26	0.03	0.18
Gross Capital Formation (GCF)	0.01	0.10	-0.19	-0.03	-0.21	-0.26	0.27	-0.07	-0.12	**1.00**	0.12	-0.21	-0.12	0.07	0.11	0.18
Real Interest Rate (RINTR)	0.04	0.14	-0.17	-0.05	-0.55	0.00	0.36	-0.18	-0.24	0.12	**1.00**	-0.55	-0.19	0.05	0.35	0.05
Economic Misery (MISR)	0.08	-0.12	0.09	0.13	0.95	-0.06	-0.27	0.14	0.38	-0.21	-0.55	**1.00**	0.07	0.01	0.03	-0.18
Human Development (HDI)	0.52	0.36	0.01	0.60	-0.07	-0.07	0.04	0.72	0.11	-0.12	-0.19	0.07	**1.00**	0.33	-0.15	0.31
Financial Depth (FIND)	0.78	0.38	-0.05	0.60	-0.14	-0.19	0.31	0.62	0.26	0.07	0.05	0.01	0.33	**1.00**	-0.03	0.60
Interest Rate Spread (INTRSP)	-0.19	0.09	-0.20	-0.21	0.07	0.00	-0.05	-0.16	0.03	0.11	0.35	0.03	-0.15	-0.03	**1.00**	-0.29
Quasi-Liquid Liabilities (QLL)	0.54	0.20	-0.08	0.42	-0.30	-0.11	0.32	0.51	0.18	0.18	0.05	-0.18	0.31	0.60	-0.29	**1.00**

Source: Author's Computation

5.2.2. Test for Stationarity and Panel Cointegration Tests

The stationary test shows that all the variables have first-order integration, and hence the panel estimation exhibits a common unit root process. This suggests the appropriateness of using panel least square estimations procedure since the theoretical formulation is based on normality assumption. The unit root test results of variables used in the study are presented on the left-hand side of *Table 5.1a.* The stationary test follows the Im, Pesaran and Shin, IPS (2003) unit root test procedure, and the results show that all the variables are stationary at their first difference, I(1). The null hypothesis of the IPS unit root tests is that all series are non-stationary processes, while the alternative hypothesis is that at least one (but not necessarily all) series to be stationary. Thus we have chosen to use IPS rather than LLC because the alternative hypothesis under IPS is more general and we think this is particularly appropriate for our study because it allows for some, but not all series, to contain a unit root. We reject the null hypothesis of non-stationarity, and accept the alternative hypothesis of stationarity. Hence, the variables entering our dynamic panel model, GMM, is in line with the prescription by Arellano and Bond, (1991), Arellano and Bover, (1995) and Blundell and Bond, (1998) that elements of the equation must be in their first difference.

The panel cointegration test for the first objective shows evidence of a cointegrating relationship as depicted by the significance of the 'between' and 'within' dimensions, using the Pedroni cointegration test. The result intensified the existence of a cointegrating relationship among all the relevant variables used in the study. The Panel v, rho, PP and ADF-Statistics for the common AR coefficients (Within Dimension) and Group rho, PP and ADF-Statistics for the individual AR coefficients (Between Dimension) are all significant at the conventional test levels as shown in *Table 5.1c.* The test was conducted to ascertain the reliability of proceeding on panel pooling of countries data and analysis. Hence, the result from cointegration test supports panel pooling approach /procedures for estimation in this study.

Table 5.1c: Panel Cointegration Tests Results on Financial Sector Reform and Financial Sector Development Model

Details	**Common AR Coeffs. Within Dimension**			
	Statistic	Probability	Weighted Statistic	Probability
Panel v-Statistic	-1.118	0.06	-1.698	0.09
Panel rho-Statistic	1.004	0.04	1.739	0.05
Panel PP-Statistic	0.842	0	1.943	0.01
Panel ADF-Statistic	0.519	0.01	1.433	0.02
Details	**Individual AR Coeffs. Between Dimension**			
	Statistic	Probability		
Group rho-Statistic	1.866	0.06		
Group PP-Statistic	2.057	0.03		
Group ADF-Statistic	1.663	0.05		

Source: Author's Computation

5.3 Empirical Results of Estimated Models

5.3.1 Investigating the Effects of Financial Reform on Financial Development

Prior to investigating the impact of policies of financial sector reforms on financial sector development, we first ascertain the nature of causality between the two variables. We used an aggregated financial sector reform[31] for this analysis, while the ratio of private credit-to-GDP is used to capture financial development as mentioned in previous chapter of this study. The time-lag explored includes two (2), four (4), eight (8), ten (10) and twelve (12)-year horizon. The aim is to understand the time period that policy changes in the financial sector leads to financial development in the overall SSA countries. The causality tests result is presented in *Table 5.2.* Evidence confirming the existence of panel unit roots among the variables was discussed in the previous section. The test for stationarity is presented on the left side of *Table 5.1a.*

(a) Analysis of Causality Tests Result for the Overall SSA Countries

From the results in *Table 5.2,* all the lagged values of financial sector reforms suggest the existence of a unidirectional causation running from financial sector reform to financial sector development, using the overall sampled SSA countries. The 12-year

[31] We aggregated the index of financial sector reform by taking a simple average of five (5) out of the seven (7) components of the index.

horizon was the only exception as no form of causality was observed. The statistical significance of policies aimed at financial sector reform was observed to decline progressively over the chosen time horizon from period 2 to 12, which suggests that the effects of policies of financial sector reform wears out with time in SSA, and therefore indicating time-sensitivity of impact.

The 2-year period and 4-period time lags passed the significance test at the 5% levels, while longer time periods (8- and 10- time lag) were only significant at 10% level. The t-statistics of the 12-year horizon was hardly significant at any conventional test levels. From the result, we can confirm that the effect of domestic financial reform on financial development is unidirectional and essentially a short-term phenomenon with no evidence of reverse causality. Furthermore, it shows that the effect of financial reform on financial development in SSA is strongest within a 2- to 4-year time-frame and becomes less effective after 4 years when such policy was first introduced. Based on our initial analysis, it can be said that policies of financial reform lead to financial development in SSA region, but the effect is immediately felt in the short-to-medium term, and the direction of causality is strictly unidirectional from financial reform to financial sector development in the period under review, and not the other way round.

Table 5.2: Causality Test: Financial Reform and Financial Development

No. of Lag	Null Hypothesis	F-Statistic	Prob.	Causation
2-Period	CPS does not cause FINR	0.03	0.97	
	FINR does not cause CPS	19.24	0.02**	FINR → CPS
4-Period	CPS does not cause FINR	0.27	0.89	
	FINR does not cause CPS	22.79	0.03**	FINR → CPS
8-Period	CPS does not cause FINR	0.11	0.99	
	FINR does not cause CPS	11.84	0.06*	FINR → CPS
10-Period	CPS does not cause FINR	0.22	0.99	
	FINR does not cause CPS	9.81	0.06*	FINR → CPS
12-Period	CPS does not cause FINR	0.52	0.89	
	FINR does not cause CPS	0.62	0.18	No Causation

Note: *, **, and *** indicates statistical significance at 10%, 5% and 1% levels.
Source: Author's Computation

The next analysis is the use of panel data analysis to investigate the impact of policies of financial sector reform on financial development, amongst other control variables (tables 5.3a and 5.3b). However, for robustness, we used ratio of quasi-liquid liabilities to GDP as measure of financial development in addition to ratio of private credit to GDP, and results obtained are not significantly different.

(b) Panel Results on Impact of Financial Reform on Financial Development

The objective to examine the link between financial reform and financial development was carried out through two separate analyses for in-depth understanding of the interrelationship between them. First, we used the aggregated financial reform in estimation, which also involves the estimation of model 'with' or 'without' lagged financial reform variables. Second, we carried out estimation using the respective components of financial sector reforms. The aim of using these disaggregated components of financial sector reforms is to understand and evaluate financial policy mix that spurs financial development in SSA. Moreso, some studies like, Demirgüç-Kunt and Detragiache, (1998); Stiglitz, (2000); Kaminsky and Schmukler, (2002), have shown that 'big-bang' approach to financial reform may cause banking crisis and output volatility, thereby generating economic uncertainties. Hence, our choice to use the respective individual components of (disaggregated) financial sector reform policy to add further to extant literature. Our main financial development variable is the ratio of private credit-to-GDP (CPS), while the ratio of quasi-liquid liabilities (QLL)[32] was also employed in a GMM framework for robustness and sensitivity checks.

The panel data estimation result for the overall 14 SSA countries is presented in *Table 5.3a* and *Table 5.3b*. From the results, the coefficient of financial reforms (FINR) variable is positive and highly significant at 1% level in the fixed-effects model 'without' lagged values of financial reforms, but the model 'with' lagged FINR was significant at 5% level. In the dynamic panel models, the coefficient of the FINR is also positive and significant at 5% level, implying that financial reform has led to financial development in the overall SSA countries. This finding is robust to a different indicator of financial development, namely *quasi-liquid liabilities/GDP,* as the sign of the coefficient was also positive and significant at 5% level (see *Table 5.3b*), confirming that the policies of financial reforms in the past two and half decades in the continent has so far had a positive and significant impact on financial development in SSA and have resulted in improved financial depth and intermediation in SSA. This result is consistent with studies by Fry (1997), Gerard and Demirguc-Kunt, (1998); Arestis and Glickman, (2002); Chinn and Ito, (2002,

[32] Often used to capture financial intermediation and the extent economic activities are monetized, but the measure is less preferred to private-credit/ GDP to represent level of financial development (see Denizer, Syigun and Owen, 2000).

2005), Cetorelli and Strahan, (2006); Ang and McKibbin, (2007); McDonald and Schumacher, (2007); Tressel and Detragiache, (2008), although most of these researchers employed different financial reform measures, but results however show that FINR have a positive influence on financial development.

However, in the dynamic panel models, all lagged values of FINR variable, namely the 1-period, 2-period and 3-period lagged FINR failed the significance test, and there were evidence of sign reversal. This is irrespective of the financial development proxy used, whether it was CPS or QLL. The result, thus, suggests that financial sector participants will respond to current reforms initiatives as a proof of compliance, but may fail to adhere to such rules going forward. The result, thus gives insight into how financial regulators in the region implement financial sector policy.

The coefficient of real per capita GDP (GDPPC) is positively signed in both fixed-effects models, whether 'with' or 'without' lagged values of FINR. Real per capita GDP is also positive in the one-step system GMM. The performance of the GDPPC coefficient was highly impressive, passing the significance test at the 1% level. The size of the coefficients is, on average, the same in both models, thus suggesting that the level of per capita income in SSA directly influence financial depth. Therefore, our finding is cautiously in line with studies that employed economic growth as explanatory variable, namely Jung, (1986); Levine, 1997); Shan, et al (2001); Khan and Senhadji, (2003); Waqabaca, (2004); and Akinlo and Egbetunde, (2010). Implied for policy is the need to adopt strategic measures to boost per capita income growth in SSA because raising level of output would via other transmission mechanism positively lead to financial sector development.

The coefficient of government final consumption expenditure as a percentage of GDP is positive and statistically significant in both the fixed-effects models and was not significant in the one-step systems GMM, although carried a positive sign. This finding suggests that government intervention and size of the public sector in the period under study supported financial development in the SSA countries. This finding is consistent with studies by Stigler, (1971); Wu, Tang and Lin, (2010); Cooray, (2011) that government size positively affect financial sector size, especially in developing economies.

The coefficient of current account balance *(CAB)* was negative and statistically significant even at 1% level. It shows that high current account deficit retards financial development, as indicated in both the fixed-effects models ('with' and 'without' FINR lagged variables). The result is, however, contrary to finding seen in study by Tressel and Detragiache, (2008) that observed a positive correlation between fiscal balance/GDP and private credit/GDP. The result suggests that high fiscal dominance hamper development of the financial sector, as it limits available pool of credit facilities for private sector borrowing and investment. Although the coefficient of legal origin was insignificant even at the 10% significance test, it was however positive, indicating that the legal origin positively influence financial sector size, and hence matters for financial development (see La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1997). Fowowe, (2014) also finds legal origin to be non-significant in explaining financial sector development in his study of selected African countries.

Inflation, which represents macroeconomic policy environment, is negative in the one-step system GMM model, as well as in the fixed-effects model with lagged values of financial reform variable. In terms of the relative effects, a 100% rise in inflation leads to a 3.3% decline in financial depth (CPS) from the one-step system GMM model. This finding confirms studies by Demirguc-Kunt and Detragiache, (1998); Boyd, Levine and Smith, (2001); and Bittencourt, (2008) that provide empirical evidence that increases in inflation rate generates disturbances in the financial sector, and hence affect the size of financial sector. Though the coefficient of inflation was positive in the fixed-effects panel estimation without lagged values of financial reforms variables, and model with QLL as dependent variable, the relationship were not significant.

The coefficient of resource dependence is negative and statistically significant at the 5% level in the one-step systems GMM model, but not in both the fixed-effects panel estimations. The negative sign suggests that the continuous dependence on natural resource rent in the countries studied adversely affect the size and development of the financial sector. This result confirms earlier studies that resource dependent countries have less financial depth than nations that are less endowed with, or less dependent on, natural resources (Auty, 2001; Gylfason, 2004; Bakwena and Bodman, 2008; Beck, 2010). The negative impact of natural resource may provide evidence of

resource-curse in the financial sector and that its abundance and dependence hinder incentives to save and invest (see Beck, 2011; Kurronen, 2012). However, when ratio of quasi-liquid liabilities to GDP is used as proxy for financial sector development, the coefficient of natural resource rent turned positive and was highly statistically significant at 1% level in a one-step system GMM model specification. The result is consistent with Iyoha, (1992); Anyanwu, et al., (1997); Stevens, (2003). This result finds support in the rapid monetisation of export proceeds by most resource-rich countries for fiscal sustenance. The unplanned nature of spending and use of resource revenue had profound effect on demand for money function, especially immediately after the resource-boom era.

Robustness and Sensitivity Checks:

a) Effects of individual financial reform on financial development

A panel data estimation using the individual components of financial sector reform, instead of the aggregated index was also carried out. See *Appendix 2, Column (A)* for the results of the fixed- and random-effects estimation. In the fixed-effects model, all the 7 components of financial reform were significant at 5% level, except interest rate controls. The results are broadly the same in the random-effects model. All financial reforms policies were positive, except the index of state-ownership in the banking sector and index of credit controls/ reserve requirements that were negatively signed, albeit significant at 5% and 1% levels, respectively. The negative outcome may provide evidence of financial repression, with particular reference to existence of directed credit programme in the region. Additionally, countries in SSA keep extremely high reserve requirements to curb inflation, but hurts credit supply and financial intermediation. In SSA, reserve requirement ranges between 15% and 25%, compared to an average of 5% in industrialised country (Chirwa, 2001). With this, banks will have to adjust lending rates upwards faster than deposit rates to maintain profitability margin, thus inducing financial intermediation inefficiency in the region. More so, banking assets owned by government, coupled with number of nationalized banks are on the rise in the continent though to avert systemic banking crisis. But, theorists have concluded that the public sector is not known to efficiently allocate scarce resource, hence government ownership of large chunk of banking assets, credit controls and restrictive reserve requirements would negatively affect financial

development. The result of this study have shown that enhancing prudential regulations; financial account openness, removal of restrictions on new bank entrance, as well as policy to encourage securities market development spur financial development. There are no known studies, to the best of our knowledge, which assesses the impact of individual components of financial reform on financial development in SSA.

b) Controlling for income and stock market effects

The study also estimated models of each income groups to ascertain whether differences in income levels across SSA countries influence the link between financial reform and financial development. See *Appendix 3* for the panel estimation results of each income group. The coefficient of policies of financial reforms is positive in lower-middle-income economies and upper-middle-income economies, but negative for low-income economies in SSA. The results suggests that, while financial reform spur financial development in lower-middle-income and upper-middle-income SSA countries, such policies hinders financial development in SSA countries in the low-income group. The coefficient of aggregate financial sector reform policy in low income economies is negative, although statistically significant at 10% level in the fixed- and random-effects models, but not in the dynamic panel model. This outcome may be indicative of the high level of uncertainties, amidst weakness in economic structure/ arrangement in low-income countries, such that financial reform eventually distorts formal credit allocation process, and perhaps investment. The fact that financial liberalisation process raises average level of real interest rate may provide a vent for informal financial sector (mainly the curbs markets) to thrive that may adversely affect the development of formal financial systems. This finding can be deduced from the thoughts of the Structuralist theorists of finance, see Tobin, (1965); Taylor (1979); Stiglitz and Weiss, (1981); and Kohsaka, (1984). They believe that growth in non-institutional finance, like money lenders and indigenous banking, may negatively affect the development of formal banking sector. The nature of economic structures in some low-income countries may also explain the poor performance of policies of financial reforms. These countries are often highly indebted both to domestic and foreign lenders, as such, the increasing use of deficit financing of fiscal operations may also deter development of the financial system.

Moreover, we combined countries with functional domestic stock markets and conducted separate panel data estimation to enhance the robustness of results obtained in the overall model. The panel data estimation results are reported in *Appendix 5.1*. OLS estimation for Nigeria and South Africa[33] were carried out along with the overall panel data modelling of SSA countries with stock markets. The coefficient of financial reform is positive and significant in the 7-country panel data estimation, as well as result obtained from OLS estimation for Nigeria and South Africa, suggesting that policies of financial reforms positively spur financial development, when effects of stock market is controlled for. In terms of the relative effects, a 10% increase in financial reform leads to a 6.1% rise in credit to the private sector (financial development) in the overall panel of 7 SSA countries, while it leads to 11.8% and 329% increase in financial depth in Nigeria and South Africa, respectively. Studies that arrived at similar conclusion include Acemoglu and Zilibotti, (1997); Svaleryd and Vlachos, (2005). Stock market is known to encourage information acquisition, reduction in cost of savings mobilization, and thus enhance investment and economic growth (Diamond, 1984; Greenwood and Jovanovic, 1990; Greenwood and Smith, 1997).

[33] Due to potential size effect of equities markets of both Nigeria and South Africa, we isolated and conducted static estimation using ordinary least square (OLS) each for both countries.

Table 5.3a: Fixed-Effects Results of Financial Sector Reform and Financial Development Model

Variables	**CPS (*without lag)***			**CPS (*with lags*)**		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	-3.996	-1.179	0.238	-3.566	-1.306	0.192
Financial Reform Index (FINR)	2.985	4.528	0.000***	0.248	3.116	0.017**
Lagged FINR (-1)				-0.486	-0.157	0.874
Lagged FINR (-2)				0.693	2.224	0.022**
Lagged FINR (-3)				2.126	0.996	0.319
GDP Per Capita (GDPPC)	0.018	14.875	0.000***	0.02	23.005	0.000***
Current Account Balance (CAB)	-0.508	-4.583	0.000***	-0.458	-4.385	0.000***
Government Consumption (GCON)	0.636	4.133	0.000***	0.538	3.612	0.000***
Legal (LEGA)	1.525	0.465	0.642	2.897	1.341	0.180
Inflation (INF)	0.002	0.078	0.937	-0.013	-0.571	0.567
Natural Resources (NRES)	-0.177	-1.439	0.151	-0.111	-1.105	0.269
No. of Observation	462			420		
R-Square	0.45			0.661		
Adjusted R-Square	0.44			0.652		
F-Statistics (Prob)	53.066 (0.000***)			79.602 (0.000***)		
CPS here is ratio of credit to the private sector to GDP						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

Table 5.3b: Dynamic Panel Results on Financial Sector Reform and Financial Development Model

Variables	CPS Model *One-step system GMM*			QLL Model *One-step system GMM*		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	0.19	0.168931	0.8659	-0.295105	-0.63129	0.5282
Credit to Private Sector (-1)	0.84	33.77501	0.0000***			
Quasi-Liquid Liabilities (-1)				0.913099	34.51985	0.0000***
Financial Reform Index (FINR)	0.278004	3.217432	0.0280**	0.307306	5.592378	0.0392**
Lagged FINR (-1)	-1.664717	-0.89655	0.3705	0.428976	0.569255	0.5695
Lagged FINR (-2)	1.977405	1.064578	0.2877	-0.948306	-1.25765	0.2092
Lagged FINR (-3)	-0.483419	-0.37853	0.7052	0.265322	0.512142	0.6088
Government Consumption (GCON)	0.051402	0.71123	0.4773	-0.005572	-0.19496	0.8455
GDP Per Capita (GDPPC)	0.003506	6.272059	0.0000***	-0.000218	-2.04135	0.0419**
Inflation (INF)	-0.033273	-2.40539	0.0166**	0.001723	0.306613	0.7593
Legal (LEGA)	1.692962	2.593108	0.0099***	-0.104896	-0.39788	0.6909
Natural Resources (NRES)	-0.049733	-2.44230	0.0150**	0.061536	4.318965	0.0000***
No. of Observation	420			420		
R-Square	0.959			0.784		
Adjusted R-Square	0.958			0.778		
F-Statistics (Prob)	980.27 (0.000***)			148.61 (0.000***)		
CPS and QLL is Credit to the Private Sector/GDP and Quasi-Liquid Liabilities/GDP[34]						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

[34] The explanatory power R^2 and joint-significance of the model is remarkably higher when the ratio of private credit to GDP was used as financial development measure, than when ratio of quasi-liquid liabilities/GDP is employed.

Presentation of Empirical Results on Financial Reform and Economic Performance

This section presents and discusses the results to validate the second objective of the study. The goal here is to investigate the impact of policies of financial reform on economic performance indicators in SSA. Economic performance proxies used as dependent variables include real per capita GDP, gross capital formation (% of GDP), human development and macroeconomic instability (misery index).

Stationarity and Panel Cointegration Tests

As reported earlier in *Table 5.1a,* The test for stationarity using the Im, Peseran and Shin (IPS) unit root test procedure shows that all the variables included in the model are stationary at first difference. The null hypothesis of the IPS unit root tests is that all series are non-stationary, while the alternative hypothesis assumes stationarity. We reject the null hypothesis of non-stationarity and accept the alternative hypothesis of stationarity. The stationarity result supports the setting up of a dynamic panel model for purpose of analyses as it satisfies a core requirement by Arellano and Bond, (1991) for dynamic panel modelling. The causality test carried out was without concern that our estimated results are spurious because all variables were in same order of integration.

The result shows that the four models were cointegrated, given their trace statistics, Maximum Eigenvalues and their respective probabilities (See *Table 5.4*). The existence of cointegrating relationship among the variables used for analysis is informed by the fact that the trace statistics and the maximum eigenvalues were significant at 5% level when checked against the Mackinnon-Haug-Michelis (MHM, 1999) critical values. Traditional panel data approaches, namely the fixed-effects and random-effects, were also estimated.

Table 5.4: Panel Cointegration Test for Each Economic Performance Model

Performance Indicators	Tests	Null Hypothesis for the Rank					
		r = 0	r < 1*	r < 2*	r < 3*	r < 4*	r < 5*
Real GDP per Capita Model	*Trace Statistic*	6.93	55.26	207.41	161.8	99.79	58.56
	Probability	0.73	0	0	0	0	0
	Maximum Eigen Values	6.93	92.1	123.7	81.91	57.76	51.39
	Probability	0.73	0	0	0	0	0
Gross Capital Formation Model	*Trace Statistic*	1.38	55.26	184.4	142.4	85.75	47.54
	Probability	0.99	0	0	0	0	0
	Maximum Eigen Values	75.0	92.1	112.8	78.31	54.78	37.32
	Probability	0	0	0	0	0	0
Macroeconomic Instability Model	*Trace Statistic*	2.77	55.26	151.6	149.4	92.75	53.69
	Probability	0.98	0	0	0	0	0
	Maximum Eigen Values	58.03	92.1	104.8	95.48	60.27	49.39
	Probability	0	0	0	0	0	0
Human Development Model	*Trace Statistic*	6.31	55.26	184.4	128.3	73.48	45.43
	Probability	0.31	0	0	0	0	0
	Maximum Eigen Values	3.61	92.1	115.5	67.21	41.16	33.39
	Probability	0.79	0	0	0	0	0.002

** Denote Maximum Number of Co-integrating Vectors*

Source: Author's Computation

5.3.2 Effects of Financial Sector Reforms on Real Per Capita GDP in SSA

Preliminary Analysis

The results of the traditional and dynamic panel are presented in *Table 5.5a* and *Table 5.5b,* respectively. The Hausman specification test shown in the lower section of *Tables 5.5a* rejects the fixed-effects model, suggesting that some omitted variables may be constant over time but vary between countries, and others may be fixed between countries but vary over time. Hence, we accept the null hypothesis, H_0, that result from the random effects model is consistent and efficient. The conclusion drawn from the Hausman test is that the random-effects model is preferred to the fixed-effects model for the levels regression estimates. The result of the second order serial correlation test removes doubts that residuals from the dynamic panel

regressions are serially correlated. The null hypothesis of no autocorrelation is accepted. Again, Sargen Test result suggests that the instrumental variable used in our modelling is valid and unbiased. Hence, we did not reject the null hypothesis as the instrument passes the validity test. The variables included in the dynamic panel model are in their first difference, and follows Arellano and Bond, (1991) procedure.

Discussion of Empirical Results

The coefficient of financial reform is positive and significant at 1% and 5% levels, respectively in the one-step system GMM and two-step system GMM models. Aggregate financial reform variable is also positive in the random-effects model, but not significant at the conventional test levels. The results from the dynamic panel models suggest that policies to liberalise the financial sector can effectively stimulate real GDP in the overall sample of 14 SSA countries. From the result, a 10% rise in financial liberalisation drive leads to a remarkable 63.8% and 51.3% rise in real per capita income. This result is consistent with findings of Montiel, (1994); De Gregorio and Guidotti, (1995); Fry, (1997); Rajan and Zingale, (1998); Allen and Ndikumana (2000); Bekaert, Harvey and Lundblad (2001b); La Porta et al, (2002); Bonfiglioli, (2008); Waheed, (2009); Gehringer, (2013) that overall financial reform enhances productivity. The result is also supported by the 'Monetarists[35]' assertion which states inter-alia that an increase in money supply increases loanable funds, and depending on the state of the economy; two effects are discernible: if there is already full employment, price level raises, otherwise aggregate output expands.

The coefficient of gross capital formation (GCF) is positive and significant at the 1% level in the traditional panel models, but only significant at 5% in the one-step system GMM, and not in the two-step GMM, though still carried the expected positive sign. The result suggests that capital formation (domestic investment) could be a key determinant of economic growth in SSA. countries. In terms of the relative effects, a 10% increase in domestic investment leads to a 44.7% and 78.0% growth in real GDP, following results obtained from the random-effects and one-step system GMM. This result confirms the capital fundamentalists' view that capital formation could be

[35] Monetarism is a theory in economics that stable economic growth can be assured only by control of the rate of increase of money supply to match the capacity for growth of real productivity.

a major driver to attaining high economic growth in developing economies, SSA inclusive. See studies by Solow, (1956); De Gregorio, (1992); Jappeli and Pagano, (1996); Katircioglu and Naraliyeva, (2006).

The coefficient of inflation, our indicator of macroeconomic policy environment, was negative, but was statistically insignificant in the dynamic panel models. The coefficient is also negative in both the fixed-effects and random-effects models, passing the significance test at the 5% level in the overall model of the 14 SSA countries. From the models, the result signifies that a 100% upsurge in inflation reduces real GDP growth, on average, by 8% following results from the traditional panel models. This shows that elevated inflationary tendencies that abound in SSA region remains detrimental to economic growth, as it represents a major distortion to resource allocation, price stability and productivity. This finding is in congruous with conclusions by most economic researchers that found higher inflation to be undesirable for economic growth. These studies include Mwaura, Ngugi and Njenga, (2009); Ahmad and Malik, (2009); and Hassan, et. al.,(2011). Hence, higher level of inflationary tendencies may distort both quantity and quality of investments, thereby stalling economic activities.

The coefficient of real interest rate is negative and not significant in the dynamic panel and random-effects models. The variable was however, significant at 10% level in the fixed-effects model. From the results, a 10% rise in real interest rate in SSA leads, on average, to a 5.2% decline in real per capita GDP in the fixed-effects and random-effects models, and a slower fall of 0.24% in the dynamic panel model. These results are in agreement with findings by Barro, (1991); Nouriel and Xavier, (1991) that a higher degree of financial liberalism leading to a rise in real interest rate could lower economic growth. However, this finding is contrary to the thinking of Goldsmith-McKinnon-Shaw, initiator of the financial liberalisation school, that policy to maintain a high and positive real interest rates in the economy encourages savings mobilisation which support investment and long-run economic growth.

The coefficient of human capital, proxy by secondary school enrolment rate, is positive and performed remarkably well in all the panel models, including the dynamic panel and random-effects model. Human capital coefficient passes the

significance tests at 1%, 5% and 10% in the dynamic panel, random- and fixed-effects models, respectively, as shown in *Tables 5.5a and 5.5b*. The high significance suggests that human capital development is an important determinant of economic growth in SSA. Human capital quality remains low in the region, such that a marginal increase in manpower training leads to higher economic growth trajectory, since better educated persons earn more income on average compared to persons with little or no education. From the estimated coefficients, a 10% increase in human capital raises real GDP per capita by 20.6%, 6.1% and 4.9% in the random-effects model, one-step system GMM and two-step GMM, respectively. Another explanation may be drawn from the fact that as the number of risk experts increases through education and training, there could be a decline in poor investments, but the quality and efficiency of investments may be enhanced in the process due to better risk evaluation and management. This outcome may lead to improved economic growth in the long-run. Skills and competence derivable through education has been justified by development economists as key growth catalyst (Schultz, 1961; Perkins, Radelet and Lindauer, 2006; Todaro and Smith, 2011). Some of these theorists argued that human capital, access to finance and good health status have equal importance as inputs in achieving economic progress.

The coefficient representing natural resource rent (NRES) is positive in all estimated panel models, but the level of significance differs. While it was highly significant at 1% level in the traditional panel models, NRES coefficient is only statistically significant at the 10% level in both dynamic panel models (*see Tables 5.5a and 5.5b*). The results suggest that natural resources can be a blessing because it raises per capita income. The positive sign may give credence to the Hartwick, (1977) which stipulates that if owners of non-renewable natural resources convert all income received from the commodity into reproducible capital; it would preserve the production opportunities, and thus would guarantee the attainment of a non-decreasing level of consumption overtime in the economy. Studies by Sachs and Warner, (1997, 1999); Gaitan and Roe, (2005); Rambaldi, Hall and Brown, (2006) arrived at a similar conclusion. Oyefusi, (2007) explains the tendency of natural resource dependence to immiserise growth. Our finding is however, contrary to studies by Sachs and Warner (1995); Mehrara and Rezaza, (2011); Kurronen, (2012).

The coefficient representing government intervention is negative but not significant at the 5% level in the dynamic panel model. It is however, positive and significant at 1% in the random-effects model. The results suggest government intervention can produce both positive and negative externalities in output generation in SSA. Evidence from the dynamic panel model shows how such government expenditure retards instead of increasing real per capita GDP in SSA, although the coefficient was not significant. One will expect government expenditure via transfer payments on welfare and other services to directly increase productivity as reported in Green, Murinde and Moore, (2002) that a rise in government spending unambiguously leads to higher income growth. But our finding is in congruous with studies by Easterly (1993); King and Levine, (1993b) that government intervention in the financial system distorts, and negatively affect attainment of steady-state growth equilibrium. In this regard, it is pertinent to ascertain the funding sources of such spending because excessive borrowings by government from the domestic financial system may crowd-out private sector credit, thereby clogging the wheel of development. Studies with similar findings include Ekpo and Egenedo (1985); Acemoglu, and Verdier, (2001); Shera, (2011); Fabayo, Posu, and Obisanya, (2011).

Robustness and Sensitivity Checks:

a) Effects of individual financial reform policy on real per capita

A panel data estimation using the individual components of financial reform, rather than the aggregated FINR index, was also carried out. *See Appendix 2, Column B* for results. The results show that banking regulation/supervision, capital account liberalization, as well as policies to develop the securities market have a positive and statistically significant impact on real per capita income in the overall SSA countries surveyed. The coefficient was significant at the 5% level. However, the result suggests that interest rate controls significantly depresses real per capita income. Other financial sector policies that hinders growth in real per capita income, but not statistically significant, include the setting of excessively high reserve requirements, entry barriers by government to control credit allocation, and state-ownership in the banking sector. The policy for banks to maintain high reserve requirements by monetary authorities adversely affect quantity of credit availability for lending by the banking sector. Also, removing potential competitors through entry barriers may

result in higher interest rate spread, thereby raising borrowing costs, lowering savings and profit. Administratively set interest rate (whether floors, ceilings or existence of interest rate bands) and high exposure of domestic banks to inefficient state-owned enterprises may also limit credit availability for investment. Studies assessing the impact of individual dimensions of financial reform on economic growth are, to the best of our knowledge not readily available, and hence comparing our finding with extant studies become difficult.

b) Controlling for income and stock market effects

This study also empirically investigates whether real per capita income is affected by policies of financial reforms in SSA, using differences in income levels and stock market as control. See *Appendix 4A* and *Appendix 5A*, respectively. Firstly, the coefficient of financial reforms *(FINR)* has a positive and statistically significant influence on real per capita income in both low- and lower-middle-income economies, and result is similar to findings in the overall sampled SSA countries. The coefficient was negatively signed, albeit statistically significant at 5% level in upper-middle-income economies. It can aptly be inferred that policies of financial sector reforms is not consistently uniform in stimulating growth across all SSA countries, since it spur per capita income growth in both low-income and lower-middle-income-economies, while it retards growth in upper-middle-income-countries. The negative outcome of financial reform-growth nexus in upper-middle-income countries may be explained by a careful assessment of beneficiaries of the credit in those countries. Financial systems in relatively high-income countries provide a large share of their services, including credit, to households rather than enterprises, accounting for an average of 33% of total private sector loans See Gulde, Pattillo and Christensen (2006). Aghion, Angeletos, Banerjee and Manova, (2005); and Beck, Büyükkarabacak, Rioja, and Valev, (2012) find insignificant relationship between finance and growth, while Arcand, Berkes, Panizza, (2012) study shows that finance starts exerting a negative effect on growth when credit to the private sector reaches 100%, following reforms and after controlling for growth volatility, banking crises and regulation. Our result indicate existence of a threshold effect, beyond which further financial liberalisation would result in anti-growth outcomes.

In addition, we used stock market effects as control and for robustness checks, to ascertain whether the existence of domestic stock market in an economy influences the transmission impact of financial reform on real GDP per capita income. OLS was used to estimate time-series data for Nigeria and South Africa to remove size-effect in the overall panel specification of countries with domestic stock exchanges. The panel data estimation result is reported in *Appendix 5A.* From the table, the coefficient representing financial reforms is positive and statistically significant at the 5% level for the seven (7) SSA countries with established equities market. The *FINR* coefficient was positive and not significant using time-series data for Nigeria, while it was positive and significant at the 5% level for South Africa. This finding is similar to the positive and statistically significant result seen in our panel estimation for the overall SSA countries. Our finding is in line with studies by Cho (1986); Levine and Zervos (1996); Arestis, Demetriades and Luintel (2001); Beck and Levine (2002); and Tadesse (2002) that liquidity provided by stock market positively predict economic growth because it removes adverse selection and moral hazard concerns often associated with conventional banking operations.

Table 5.5a: Traditional Panel Results of Financial Sector Reform and Real Per Capital GDP

Panel Estimation of the GDPPC Model (Fixed-Effects and Random-Effects)

Variables	***Fixed-Effects Model***			***Random-Effects Model***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	6.181	12.014	0.000***	5.468	2.022	0.043**
Financial Sector Reform (FINR)	-18.915	-1.133	0.257	2.331	0.195	0.845
Gross Capital Formation (GCF)	3.288	2.81	0.005***	4.476	3.90	0.001***
Government Consumption (GCON)	6.421	2.791	0.005***	6.455	2.823	0.005***
Inflation (INF)	-0.921	-2.825	0.01**	-0.728	-2.267	0.023**
Natural Resources (NATR)	9.856	4.154	0.000***	10.061	4.491	0.000***
Real Interest Rate (RINTR)	-0.521	-1.732	0.084*	-0.482	-1.602	0.109
Secondary School Enrolment	1.378	1.662	0.097*	2.061	2.776	0.01**
No. of Observation	462			462		
R-Square	0.988			0.767		
Adjusted R-Square	0.987			0.754		
F-Statistics (Prob)	677.38 (0.000***)			13.038 (0.000***)		
Hausman Test	Chi^2 (9) = 0.95 (0.322)			N/A		
GDPPC here is GDP Per Capita Model						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

Table 5.5b: Dynamic Panel Results of Financial Sector Reform and Real Per Capital GDP

Panel Estimation of the GDPPC Model (SGMM Models)						
Variables	***One-step Systems GMM***			***Two-step Systems GMM***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	-27.572	-2.918	0.003***	-19.421	-2.204	0.028**
Lagged Value of GDP (-1)	0.996	44.638	0.000***	1.352	31.073	0.000***
Lagged Value of GDP (-2)				-0.357	-8.234	0.000***
Financial Sector Reform (FINR)	6.386	2.597	0.009***	5.134	2.266	0.023**
Gross Capital Formation (GCF)	0.780	2.394	0.017**	0.332	1.077	0.282
Government Consumption (GCON)	-0.503	-0.988	0.323	-0.161	-0.341	0.733
Inflation (INF)	-0.008	-0.095	0.923	-0.037	-0.466	0.641
Natural Resources (NATR)	0.301	1.986	0.090*	0.194	1.957	0.071*
Real Interest Rate (RINTR)	-0.035	-0.465	0.642	-0.012	-0.181	0.856
Secondary School Enrolment	0.617	4.559	0.000***	0.493	3.931	0.000***
No. of Observation	448			434		
R-Square	0.998			0.799		
Adjusted R-Square	0.997			0.792		
F-Statistics (Prob)	461.96 (0.000***)			484.27 (0.000***)		
GDPPC here is real GDP Per Capita Model						
Sargan Test	Chi^2 (18) = 30.44 (0.377)					
Test for Second Order Autocorrelation (The Null hypothesis is that there is no autocorrelation)	Z = -2.78 (0.773)					
Note: GDPPC here is real per capita GDP.						
Also note that the fixed effects model is in levels while the dynamic model is estimated based on Arellano and Bond procedure.						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

5.3.3 Effects of Financial Sector Reform on Gross Capital Formation (Domestic Investment) in SSA

Preliminary Analysis

From *Tables 5.6a* and *Table 5.6b*, the goodness of fit using adjusted R-squared was 34.4% and 62.0% in the fixed-effects, and random-effects models, respectively. About 75.8% systematic variation in gross capital formation is explained by the explanatory variables in the one-step systems GMM, while the explanatory power rose to 77.2% in the two-step systems GMM model. The F-Statistics which test the significance of the overall model is highly significance even at 1% level, suggesting that our modelling technique is appropriate and also well specified.

The Hausman specification test result shown in the lower section of *Table 5.6a* with Chi-Square value of 34.11 and probability value of 0.000, indicates preference for fixed-effects model for analysis and not the random-effects model. The results indicate that the individual unobserved country-specific effects are uncorrelated with the explanatory variables. Thus, we accept the alternative hypothesis, that the fixed effects model will produce results that are consistent, while the null hypothesis was rejected instead. However, for robustness check of results obtained from our dynamic panel model, the baseline traditional panel framework for comparism is the fixed-effects model. We reported results from the random-effects model for emphasis. The dynamic panel models estimated are robust to autocorrelation concern as shown by the second-order autocorrelation test in the lower section of *Table 5.6b*. We accepted the null hypothesis of no autocorrelation. The Sargan test, a test of the validity of instrumental variable and over-identifying restrictions, shows that the instrumental variable employed is valid, and so the null hypothesis is accepted.

Discussion of Empirical Results

Results from the system GMM model reported in *Table 5.6b*, reveals one-period lagged GCF is positive and highly statistically significant at 1% level in the one-step system GMM. This implies that previous year level of capital formation significantly boost current year's capital intensities. In the two-step system GMM, the 2-period lagged GCF is negative which is at variance with a priori expectation, and also not significant at the chosen test level. The outcome may be due to the investments

lumpiness in industries with enclave properties, like mining sub-sector that have little or no linkage with other real sectors of the economy in the region (see Wijnbergen, 1984). The negative sign of the two-period lagged value of GCF suggests the absence of spill-over effects of investments in the region, with potential devastating effect on economic growth.

The coefficient of aggregate policy of financial sector reform is positive and significant in both the random-effects and dynamic panel models at 1% level. It was not significant in the fixed-effects model, although carried the expected positive sign. In terms of the relative effects, the result indicates that policy measure aimed at reforming the financial sector by 100% leads to a 53.1% and 43.7% rise in gross capital formation in the overall sample SSA countries, following results obtained from dynamic panel estimations. The effect of a 100% rise in effort at financial reforms causes gross capital formation to rise steeply by 225.5% using estimated results from the random-effects model. This result supports studies by De Melo and Tybout, (1986); Seck and El Nil, (1993); Levine and Zervos, (1998); Sauve, (1999); Galindo, Micco, and Ordonez, (2002); Bekaert et al. (2005); Bonfiglioli (2008); and Fowowe, (2011) that financial sector reform improves rate of capital formation by boosting resource allocation efficiency and investment mechanism. It can be concluded from the study that the positive and significant impact of the aggregate financial sector reform variable on investment in the sampled SSA countries could be that the sets of policies reforms adopted during the period under review have stimulated investment through more efficient credit allocation, and greater financial flexibility for investors. This finding contradicts study by Campbell and Mankiw, (1991) that since financial liberalisation relaxes consumer credit constraints, the resultant lower savings ratio is expected and thereby lower rate of capital accumulation.

The coefficient of real interest rate shows a negative but insignificant relationship with gross capital formation in the dynamic panel model. The sign of the coefficient was also negative, but highly significant at 1% level in both the fixed-effects and random-effects models. Empirical evidence shows that a 10% rise in real interest rate result in a 0.5% and 0.08% decline in capital formation for the fixed-effects and dynamic panel models, respectively. This finding supports studies like Jorgenson, (1963); Tobin, (1965); De Melo and Tybout, (1986); Gelb, (1989); Seck and El Nil,

(1993); Warman and Thirlwall (1994); Mwaura, Ngugi and Njenga, (2009); and Fowowe, (2011), suggesting that higher interest rate negatively affect business decisions to invest. This finding is, however, contrary to the financial liberalisation hypothesis and studies by McKinnon (1973); Shaw (1973); Laumas, (1990); and Athukorala, (1998) that suggests that higher real interest rates encourage savings and also has a positive effect on the volume and quality of investment in financially repressed economies.

The coefficient of inflation is negative and not significant in the dynamic panel model. The coefficient shows a significant, and economically important, negative relationship in the fixed-effect and random-effects models at the 5% level. In terms of the relative impact from the results, a 100% upsurge in inflation reduces capital formation in SSA by 5.0% and only by 0.4% in the dynamic models (although not significant). Literatures have proven that investment is largely distorted in environment of high macroeconomic uncertainties and frequent inflationary episodes, which is an essential characteristic of most SSA countries. Hadjimichael and Ghura, (1995); Ogbokor, (2004) and Ahmed and Islam, (2010) links presence of high inflation to high price variability, which lower investment, efficiency and productivity trajectories. That inflation exerts a negative but insignificant, impact on capital formation was also found in Green and Villanueva, (1991); De Gregorio (1992); Choi et al., (1996); Boyd, Levine and Smith, (2001); Detragiache, Gupta and Tressel, (2005); Li, (2006); and Kablan, (2010) studies. While Athukorala and Sen, (2002) held that high inflation could lead to a major capital flight and further inefficient allocation of the available resources. The finding from this study further intensify the fact that inflation, a tax on real balance, negatively affects real returns on savings by causing informational friction in the financial system, thereby leading to credit rationing, and hence divergence between potential and actual investment.

The coefficient of natural resource rent is negative and highly significant in the estimated dynamic panel models, one-step system GMM and two-step system GMM. The impact was, however positive in both fixed-effects and random-effects models and was also significant at 5% level. This indicates that the impact of natural resource dependence on GCF is mixed in the countries studied. In terms of relative impact, a 100% increase in natural resource rent using the dynamic panel estimation as the

baseline model, leads to a 4.7% decline in GCF in the overall sample. This result gives acceptance to the resource curse hypothesis, which says that natural capital may crowd-out real capital, its quantity and efficiency. Thus, the negative impact of natural resource dependence may be translated to economic growth, through negative impact on saving and investment (Sala-i-Martin and Subramanian, 2003; Gylfason and Zoega, 2006; Rehman and Naveed, 2007; Ploeg and Poelhekke, 2009; Ploeg and Venables, 2011). However, results from the fixed-effects and random-effects models show that a similar rise in resource rent can potentially increase the level of capital formation by 29.2% and 18.9%, respectively. This shows that rent collected from natural resources can have a stabilising effect if it provides developmental funds for industrial takeoff (see Sachs and Warner, 1997; Gylfason, 2004).

The relationship between our variable representing the size of government's intervention is positively related to GCF in all panel model specifications. The coefficient is not significant in the dynamic panel models, but highly significant in the fixed-effects and random-effects models. From the results, a 100% rise in government expenditure lead to 56.5% and 56.3% rise in fixed-effects and random-effects models. This result supports the notion that well-targeted government intervention in SSA may crowd-in private investment because it encourage and complements private investment. The result suggests that complete interventionist approach by government may play a positive and important role in the process of capital formation in SSA, and finding is in congruous with Stigler, 1971; Oshikoya, 1994; Cardoso, 1993; Apergis, 2000; and Ramirez, 2000. Contrary to our findings, Lugo (2001) sums that government interventional investment may crowd-out private investment when: (i) government invests in inefficient state-owned firms; (ii) private investors expect higher taxes to finance increases in expenditures; and/or (iii) the public sector competes with the private sector for domestic loanable funds. Studies that finds negative effects include Blejer and Mohsin (1984); Pereira, (2000); Ahmad and Malik, (2009); Hassan, et al., (2011). Mauro, (1998); Ugur and Dasgupta, (2011) observed that public officers dedication to accumulation of political capital that are not socially productive, especially amongst developing countries, lowers the quality of infrastructure projects and public services, hence private capital formation.

The coefficient of human capital proxy by secondary school enrolment rate is negative in all panel estimation models, which contradicts a priori expectation. It performed well in the traditional panel data analysis at the 5% significance level and is not significant in the dynamic panel model. In terms of the relative impact, a 100% increase in human capital development leads to a 0.8%, 11.7% and 4.9% decline in GCF in the fixed-effects, random-effects and dynamic panel models, respectively. Human capital is expected to have a positive impact on productivity of resource and economic growth through total factor productivity, accumulation of knowledge, good health and other human capabilities (Mbanefoh, (1980); Barro, (1991); Mankiw, Romer and Well, (1992); Islam, (1995); Odedokun, (1996); Benhabib and Spiegel, (2005); Todaro and Smith, (2011). Although our finding is contrary to conventional wisdom, studies that find similar negative effect include Islam (1995); Hoeffler, (1997); Pritchett, (2001); and Ayara (2003). The negative relationship between human capital and GCF may not be too surprising given the large proportion of unskilled labour force and existence of low productivity in SSA region, despite abundant supply of labour. A cogent reason flows from our use of secondary school enrolment in this study which entails presence of risk management experts. Doing business in African environment is considered highly risky due to high interest rate and institutional uncertainties. Thus, when there is increased emphasis on risk profiling by risk managers, there is higher likelihood that risky projects will to be rejected and not financed by formal banking system. This scenario limits the quantity of investment, although investment quality may rise. If investors choose to obtain loans from the less competitive curbs market, but can only do so at higher interest rate, which could deter further investment. These explanations may justify the occurrence of a negative impact of human capital in explaining the behaviour of gross capital formation in SSA countries. FDI is often used to bridge the savings-investment gap and the technological shortfall in developing economies, but FDI is not a perfect substitute for developing home-grown entrepreneurship/technology, as most foreign investors frequently repatriate, and not reinvest profit in the local economies. Other possible explanations may be the wide-spread brain-drain that can limit innovation and investment.

Robustness and Sensitivity Checks:

a) Effects of individual financial reform policy on gross capital formation

A panel data estimation accessing the impact of individual components of financial sector reform on GCF, instead of the aggregated financial reform index was conducted. See panel data estimation results in *Appendix 2, Column C.* The results suggest that coefficients of prudential regulations and supervision of the banking sector, capital account liberalization, as well as extent of bank privatization were positive and statistically significant at 5% level. All other components of financial reforms index were positive, with the exception of policies aimed at developing the securities market (although statistically significant at 5% level) and interest rate control that were negatively signed. In terms of the relative effects, a 10% implementation of prudential guidelines and bank supervision results in a 34.3% rise in gross capital formation in the overall 14 SSA countries. GCF rises by 5.3% and 6.0% on capital account liberalization and private sector-led banking system, respectively. The negative impact of coefficient of securities markets openness to foreign investors may not be surprising as most investments by foreign hedge funds in emerging markets, including countries in SSA countries, are mainly on short-term financial instruments. These short-term speculative capital (or hot money) is known to generate economic uncertainties that have implication on domestic investments. Studies assessing the impact of individual components of financial sector reform on gross domestic formation are scanty and relatively recent.

b) Controlling for income and stock market effects

The study also estimates models for each income groups, in line with the World Bank classification, to ascertain whether differences in income levels affect the relationship between financial sector reforms and gross capital formation. See *Appendix 4B* for the panel data estimation results for each income groups. Empirical findings from estimated panel models reveal mixed outcomes. The coefficient of financial liberalisation is positive and statistically significant at 5% level for low income economies. It is negative for both lower-middle and upper-middle income SSA economies, although financial reform variable was not statistically significant in lower-middle income economies. Because low income economies, on average, have spare capacity for economic expansion, any policy aimed at financial liberalisation

that marginally increase credit allocation to the private sector of the economy increase level of domestic investment and economic growth. See studies by Levine, (1997); King and Levine, (1993b) and Acemoglu, et al., (2006). However, an interesting observation from our result is that financial sector reform is not having a uniform impact on investment across all SSA countries. This suggests that financial sector reforms have not increased the level and efficiency with which investment funds are allocated in various countries at the same pace. Moreover, the negative coefficient of financial reform in both lower-middle and upper-middle income economies may be explained by a possible distortion in economic agents' preference for current consumption, and not savings, due to removal of constraint to borrowing as a result of financial liberalisation. See also Bayoumi, (1993) and Singh, (1997).

In addition, we controlled for stock market effects for robustness check to ascertain whether presence of stock markets have direct influence on the relationship between financial reforms and investment in SSA countries. The panel data estimation result is reported in *Appendix 5B*. Empirical findings from the panel models reveal mixed results. For the 7 countries out of the 14 sampled SSA countries with domestic stock markets, our result confirms that financial reforms positively drives capital formation in SSA and the coefficient is highly significant, even at 1% level but not in the dynamic panel model. The coefficients were negative and statistically insignificant in the OLS estimation for both Nigeria and South Africa. The negative outcome may be due to induced financial fragility often a consequence of financial liberalisation. At the dawn of the 2008 global financial crisis, for example, indicators of most global equities markets, SSA inclusive, nosedived to their historical lows due to exit of foreign hedge funds that led to reduction in operations of the markets. South Africa and Nigeria have the biggest stock markets in Africa following decades of financial reforms that led to increased participation of foreign investors. When the stock market declined, both investments and economic growth dynamics in both countries, like in other emerging economies, were severely affected due to huge exposure of the market to foreign participants. This may explain the negative impact of financial reform on capital formation in both countries due to flight-to-quality effects of the crisis.

Table 5.6a: Traditional Panel Results of Financial Sector Reform and Gross Capital Formation

Panel Estimation of the GCF* Model						
Variables	***Fixed Effect Model***			***Random Effect Model***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	12.431	5.978	0.000***	8.889	5.041	0.000***
Financial Reform Index (FINR)	0.233	0.332	0.739	2.255	5.158	0.000***
Government Consumption (GCON)	0.565	6.091	0.000***	0.563	6.467	0.000***
Inflation (INF)	-0.059	-4.445	0.000***	-0.054	-4.162	0.000***
Natural Resources (NATR)	0.292	2.959	0.003**	0.189	2.772	0.005***
Real Interest Rate (RINTR)	-0.059	-4.856	0.000***	-0.062	-5.162	0.000***
Secondary School Enrolment	-0.117	-3.406	0.000***	-0.049	-1.879	0.061*
No. of Observation		462			462	
R-Square		0.416			0.621	
Adjusted R-Square		0.344			0.62	
F-Statistics (Prob)		5.744 (0.000***)			20.721 (0.000***)	
Hausman Test		Chi^2 (9) = 34.11 (0.00)			N/A	
GCF here is Gross Capital Formation						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

Table 5.6b: Dynamic Panel Results of Financial Sector Reforms and Gross Capital Formation

Panel Estimation of the GCF* Model (Systems GMM Models)

Variables	***One-step systems GMM***			***Two-step systems GMM***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	3.074	4.423	0.000***	2.216	3.038	0.002***
Lagged Value of GCF (-1)	0.829	33.886	0.000***	0.909	19.034	0.000***
Lagged Value of GCF (-2)	N/A	N/A	N/A	-0.034	-0.749	0.453
Financial Reform Index (FINR)	0.531	2.868	0.004***	0.437	2.317	0.021**
Government Consumption (GCON)	0.019	0.504	0.614	0.02	0.521	0.602
Inflation (INF)	-0.004	-0.644	0.519	-0.0002	-0.027	0.978
Natural Resources (NATR)	-0.055	-3.136	0.001***	-0.039	-2.144	0.032**
Real Interest Rate (RINTR)	-0.009	-1.585	0.113	-0.007	-1.275	0.202
Secondary School Enrolment	-0.008	-0.961	0.336	-0.008	-0.982	0.326
No. of Observation	448			434		
R-Square	0.762			0.776		
Adjusted R-Square	0.758			0.772		
F-Statistics (Prob)	201.99 (0.000***)			185.08 (0.000***)		
Hausman Test	N/A			N/A		
Sargan Test	Chi^2 (18) = 30.44 (0.377)					
Test for Second Order Autocorrelation (The Null hypothesis is that there is no autocorrelation)	Z = -7.78 (0.975)					

GCF here is Gross Capital Formation

Also note that the fixed effects model is in levels while the dynamic model is estimated based on Arellano and Bond procedure.

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

5.3.4 Effects of Financial Sector Reform on Human Development in SSA

Preliminary Analysis

The Hausman specification test shown in the lower section of *Table 5.7a* and *Table 5.7b* shows preference for the random-effect model, compared to the fixed-effects model, since the Chi-Square value reported is 22.07 and probability value of 0.108. Thus, we accept the null hypothesis, that random effects model will under this situation produce consistent and efficient results, thereby rejecting the alternative hypothesis. For the dynamic panel model, the Sagan test results shown in the lower portion of *Table 5.7*, suggests that the instruments included are valid in both specified dynamic panel regressions. The probability was not significant at conventional test levels. Hence, we accept the null hypothesis that the instruments are valid. Also, the second order autocorrelation tests reported by the z statistics of -3.48 and a probability value of 0.853, rejects the existence of second order autocorrelation, and thus we accept the null hypothesis of no autocorrelation.

Discussions of Empirical Results

From the dynamic panel model result in *Table 5.7b*, the one-period lagged HDI and the two-period lagged HDI are positively signed in the sequential models estimated. The one-period lagged HDI was highly significant at 1% level, in line with a priori economic theory that countries initial level of human development can be a spur to economic progress and current level of human development. However, although HDI (-2) is not significant in explaining current human development, the positive sign is an indication that the advantage that is gained from the improvement in incentive factors is a lasting one. This result intensifies the need for policy forthrightness and efficiency in implementing desired goals.

The coefficient of aggregate FINR is positive and significant in the random-effects model at 5% level, but not significant in the dynamic panel model, though positively signed. Although the relative effects of financial reform on human development is weak, the results show that a 100% increase in drive towards financial liberalisation lifts human development marginally by about 0.9% from the dynamic panel model, and 0.04% in the random-effects. See *Table 5.7a* and *Table 5.7b*. Positive effects of FINR can be seen in studies like Sowa (2002); Arestis and Caner, (2004); Bakwena

and Bodman, (2008, 2010); and Zhuang, et al (2009); IMF, (2013). Thus, we conclude that financial reform can lead to human development, hence poverty reduction, if growth is engendered in the economy through restructuring of the financial system that makes credit available to the poor, thereby improving their welfare. It is in this regards that we submit that access to more diversify financial services/products induced by policies of financial reforms would support human development that promotes inclusive growth.

The coefficient of government consumption, proxy for intervention and size of government was negative and not significant in explaining human development dynamics in SSA from results obtained in the dynamic panel models. It was also negative but significant at 5% level in the random-effects model. The relative impact from the random-effect and dynamic panel shows that 100% increase in government intervention leads to 0.1% and 0.03% decline, respectively in human development across SSA countries. There are limited empirical researches that access the effect of government intervention on human development, but a few implied studies include Thompson (1993); King and Levine, (1993b); Mauro, (1998); Fosu, Bates and Hoeffler, (2006); and Shera, (2011). This finding leans on the practice by governments to finance fiscal operations through massive borrowings from the domestic financial market that crowds out private sector investment through higher cost of funds. As such, increases in unemployment rate would mean lower income which hinders human development trajectory in the region. In addition, the notion to raise taxes to finance budget deficit reduces disposable income and standard of living. Furthermore, corruption continues to circumvent popular choice in public projects, and as such, affect the composition of government expenditure, erode potency of poverty reduction strategies; and in the long-run hampers economic growth which disproportionately burdens the poor. This finding therefore shows that poorly executed intervention, amid poor institutional quality, may hinder human development in the SSA region.

The coefficient representing inflation is negative and not significant at the conventional tests levels in the random-effects models and dynamic panel models. The results show that higher inflation rates have detrimental negative effect on economic growth, via its immiserising impact on human development. This finding is

in consonance with studies like Bruno and Easterly, (1996); Athukorala and Sen, (2002); Ahmed and Mortaza, (2005). Inflation causes price variability, reduces real savings and real value of income, hence indirectly affects the standard of living (See Hadjimichael and Ghura, (1995); Ogbokor, (2004); Ahmed and Islam, (2010). The presence of high and structurally-induced inflation, a common characteristic in most developing economies including SSA, may be one of the prominent causes of income inequality and low productivity in the region. Since income of fixed income earners does not change proportionately as rising prices, then the poor are reduced to abject misery and poverty, thereby worsening human development of the country.

The natural resource rent coefficient was not significant at the conventional test levels in all the estimated models, namely fixed-effects, random-effects and dynamic panel models. The coefficients however, were negatively signed, suggesting the existence of resource-curse effects on human development amongst sampled SSA countries. The resource curse hypothesis suggests a negative relationship between natural resource endowment and long-term economic growth/ development. Studies like Sachs and Warner, (1995); Sala-i-Martin and Subramanian, (2003); Oyefusi, (2007); and Mehrara and Rezaza, (2011) noted that the presence and high dependence on a single narrow inelastic natural resource, when poorly managed, causes institutional weakness/ civil conflict and induces a voracious rent-seeking attitude that often neglects the poor and underprivileged persons in the economy. Gravin and Hausmann, (1988); Ross (2004b) associates natural resource-abundance with greater inequality and poverty for a larger majority of a country's population, while Mauro, (1998) conjecture that since rent-seeking efforts get rewarded in shorter time frame than productive work and talents are misallocated.

The coefficient of real interest rate variable was negative and passed the significance test at the 5% levels in the dynamic panel models, but was highly significant at 1% in the traditional panel models. The result shows that when real interest rate rises further, say by 100%, human development in SSA decline, albeit, marginally by 0.02% and 0.011% from the random-effects and 2-step dynamic panel models, respectively. This shows that real interest rate dynamics is a potent determinant of human development in the region. High real interest rate, an expected outcome of financial liberalisation for formal financial institutions, may negatively affect the access to long-term credit

by the core-poor, and thus become excluded from formal banking institutions. The high interest rate would likely result in elevated level of lending rates, especially in low-income countries, often characterised by inefficient financial system. The fact that informal financial institutions (curb markets) usually charge higher interest rates and are not a good substitute for long term financing, suggest that persons relatively poor and lacking sufficient income and assets/collateral would remain trapped in the vicious cycle of poverty. In this regard, our study is consistent with De Melo and Tybout, (1986); Gelb, (1989); Seck and El Nil, (1993); Warman and Thirlwall, (1994); Mwaura, Ngugi and Njenga, (2009); and Fowowe, (2011).

The coefficient representing human capital, proxied by secondary school enrolment rate, was positive and significant at the 5% level in the fixed-effects model. human capital coefficient easily passed the test at 1% in the random-effects and dynamic panel models. In terms of the relative impact, a 100% increase in human capital in SSA countries leads to a 0.02% rise in general human development. Todaro and Smith, (2011) opined that education plays a key role in the ability of developing country to absorb modern technology and to develop the capacity for self-sustaining growth and development. Apparent from the result is that since the highly educated persons receive greater life-cycle income and are healthier, which thus support human development. Similar results can be seen in studies by Schultz, (1961); Barro, (1991); Okojie, (1995); Burnett, Marble and Patrinos, (1995); Grammy and Assane, (1996); UNDP, (2003) that through education, individuals can increase their total productivity, generates higher net returns, compared to the uneducated, and in consequence, raise economic and human development trajectories.

Robustness and Sensitivity Checks:

a) Effects of individual financial reform policy on human development

Results from model using individual dimensions of financial reforms show that the coefficients of interest rate control, private sector-driven banking system and policies aimed at developing the securities market were positive and significant at 5%. See *Appendix 2, Column D*. More so, policy on credit controls and requirements for banks to keep high reserves also positively influence human development, although not statistically significant. This shows that strategies to administratively control

interest rates and credits flow to priority sector of the economy, usually in the area the country has comparative advantage support human development, as it increases employment, income and productivity. This finding is in line with Stiglitz (1994) and other Structuralist theory of finance and growth that financial repression can have a positive effect on economic performance. The result suggests that these sets of financial policy strategies are essentially pro-poor, when well-focused. Coefficients representing entry barriers of new banks (whether domestic or foreign) was negatively signed, suggesting that restriction to banking system expansion and competition reduces intermediation efficiency, thus have devastating consequence for financial inclusion, human development and capabilities.

b) Controlling for income and stock market effects

Appendix 4C shows the panel data results for each income groups to ascertain whether differences in SSA income groupings influences the extent of impact of financial reform on human development. From the table, all coefficients of FINR in all our estimated models carried the expected sign. The coefficient of FINR is positive and significant at 5% in low-income economies, highly statistically significant at 1% in upper-middle-income economies, but only significant at 10% in lower-middle income economies. Although, the levels of significance of FINR differs, the results, however, show that policies of financial reform is having a fairly uniform impact on human development across all SSA income groups, suggesting that financial sector reform has supported human development in low-income economies, lower-middle income economies and upper-middle income economies.

The result for stock market effects is presented in *Appendix 5D.* Aggregate FINR is positive and significant in all models like results from our overall SSA countries. Policies of financial sector reform had a positive effect on human development in both Nigeria and South Africa, such that a 100% rise in financial liberalisation lifts human development by 3.87% and 3.21%, respectively. Using the dynamic panel model, such drives increases human development by only 0.19% in the 7-country panel. Edo, (2009) asserts that the stock market is the citadel for long-term funds for investment crucial for economic growth. Thus, the stock market potentially supports human development and capabilities due to assess to more diversified funds.

Table 5.7a: Traditional Panel Results of Financial Sector Reform and Human Development

Panel Estimation of the HDI Model						
Variables	***Fixed Effect Model***			***Random Effect Model***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	0.415	25.794	0.000***	0.388	16.97	0.000***
Financial Reform Index (FINR)	-0.001	-0.114	0.909	0.009	2.621	0.009**
Government Consumption (GCON)	-0.001	-1.357	0.175	-0.001	-2.032	0.042**
Inflation (INF)	0.00003	0.342	0.731	-0.0005	-0.559	0.575
Natural Resources (NATR)	-0.0004	-0.608	0.543	-0.0008	-0.123	0.901
Real Interest Rate (RINTR)	-0.0003	-2.707	0.007***	-0.0002	-2.63	0.008***
Secondary School Enrolment	0.0006	2.344	0.019**	0.001	5.774	0.000***
No. of Observation	462			462		
R-Square	0.809			0.665		
Adjusted R-Square	0.785			0.654		
F-Statistics (Prob)	34.12(0.000***)			15.076(0.000***)		
Hausman Test	Chi^2 (9) = 22.07 (0.108)					
** HDI here is Human Development Index*						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

Table 5.7b: Dynamic Panel Results of Financial Sector Reform and Human Development.

Dynamic Panel Estimation of HDI Model						
Variables	***With one lag value***			***With two lag values***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	0.031	4.424	0.000***	0.032	4.397	0.000***
Lagged Value of HDI (-1)	0.929	6.155	0.000***	0.923	19.06	0.000***
Lagged Value of HDI (-2)	N/A	N/A	N/A	0.004	0.095	0.924
Financial Reform Index (FINR)	0.0004	0.299	0.765	0.0003	0.265	0.791
Government Consumption (GCON)	-0.0003	-1.161	0.246	-0.0003	-1.113	0.266
Inflation (INF)	-0.00003	-0.518	0.604	-0.00002	-0.409	0.682
Natural Resources (NATR)	-0.00005	-0.427	0.669	-0.00005	-0.421	0.673
Real Interest Rate (RINTR)	-0.0001	-2.511	0.012**	-0.00011	-2.524	0.012**
Secondary School Enrolment	0.0002	3.061	0.002***	0.0002	3.031	0.002***
No. of Observation		448			434	
R-Square		0.939			0.937	
Adjusted R-Square		0.938			0.936	
F-Statistics (Prob)		98.02(0.000***)			79.98 (0.000***)	
Hausman Test		N/A			N/A	
Sargan Test				Chi^2 (18) = 30.44 (0.377)		
Test for Second Order Autocorrelation (The Null hypothesis is no autocorrelation)				Z = -3.48 (0.853)		
HDI here is Human Development Index.						
Also note that the fixed effects model is in levels while the dynamic model is estimated based on Arellano and Bond procedure.						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

5.3.5 Effects of Financial Sector Reform on Macroeconomic Instability

Preliminary Analysis

As part of the objective of this study, an analysis to ascertain the role of policies of financial sector reforms in promoting economic stability was also attempted. We captured extent of macroeconomic instability by constructing a misery index[36] for each of the countries. Economic misery index is used as the dependent variable, while explanatory variables include aggregate financial reform, and other control variables. The main thrust of the analysis here is to verify whether financial sector reform policy generate of douse the occurrence of macroeconomic uncertainties in SSA countries.

The Hausman model selection test rejects the acceptance of random-effects model for the fixed-effects model. Thus, we reject the null hypothesis, that random effects are consistent and efficient, and accept the alternative hypothesis that the fixed effects model will produce consistent results. Hence, results from the fixed-effects model is compared with estimates from dynamic panel model. The random-effects models are also reported for emphasis and robustness check. For the dynamic panel model, the Sagan test result shown in the lower portion of *Table 5.8b* suggests that the instruments are valid. Hence, we accept the null hypothesis that the instruments are valid. Also, the second order autocorrelation test reported by the z statistics of -19.78 and a probability value of 0.982, rejects the existence of second order autocorrelation and accept the null hypothesis of no autocorrelation.

In terms of the goodness of fit of the model, as shown by the R-squared, about 97.1% and 96% systematic variations in macroeconomic instability (economic misery) is explained by all the explanatory variables used in the fixed- and random-effects models, respectively. For the one-step systems GMM and two-step systems GMM models, about 95.8% and 66.1% variations in the dependent variable are explained, respectively. The overall model specification test, using the F-Statistics, shows that both fixed-effects and random-effects models are correctly specified. The F-statistic of 98.02 and probability value of 0.000 also confirm that the overall dynamic panel models are highly statistically significant even at the 1% level. This confirms variables included in the model have high joint significance.

[36] The 'misery index' was computed by a simple summation of inflation rate, unemployment rate and fiscal deficit for each of the 14 sampled SSA countries used in the study.

Discussion of Empirical Results

From the dynamic panel model results in *Table 5.8b*, the coefficients of the one-period lagged macroeconomic instability (MISR) and the two-period lagged MISR are both positively signed. The results confirm the likelihood of a vicious cycle of economic malaise in the sampled SSA countries. It suggests that economic distortions in one period reinforce the difficulties in another, and further confirmed by the coefficient of the two-period lagged of MISR, which was significant at the 10% level. Hence, we submit that just as initial level of economic growth can spur economic progress in another period, so a faulty economic structure or instability can become self-fulfilling and destructive in subsequent periods.

The impact of policies of financial reform (FINR) on economic instability is mixed. The coefficient of FINR is positive and significant at the 1% level in the dynamic panel modesl, but negative in the traditional panel, but only significant at 5% level in the random-effects model. The positive sign indicates that policies of FINR lead to macroeconomic instability in surveyed countries. Thus, in terms of the relative impact, a 100% liberalisation of the financial system results in 55.3% and 60.7% deterioration in macroeconomic situation, following results from the one-step and two-step systems GMM models, respectively. This finding supports studies by Diaz-Alenjandro, (1985); Demirgüç-Kunt and Detragiache, (1998); Stiglitz, (2000); Kaminsky and Schmukler, (2002); Bonfiglioli, (2008); Reinhart and Rogoff, (2009); Laeven and Valencia (2010) that traces occurrence of higher levels of inflation, banking (financial) crisis, output volatility and other growth-inhibiting turmoil to financial liberalism, with an underlying consequence for attaining economic stability. Aryeetey, (2003) and Senbet and Otchere, (2005); and Obadan, (2006) hinted that financial liberalization, amidst presence of institutional and structural bottlenecks, generates uncertainties, and hence may not stimulate the desired economic growth. Most African countries show evidence of weak institutions and economic downturn in the early 1980s and 1990s, and more recently from effects of the 2008 global economic/financial crisis. Hence, it is necessary to complement financial sector reform with other structural reforms to promote economic stability.

Meanwhile, result from the traditional panel models, especially the random-effects model, shows that financial reform impact is negative and significant at the 5% level.

The result suggests that domestic financial reform can enhance the resilience of the economy to respond to financial shocks, and hence could help resolve uncertainty in the economic environment. In terms of the relative effects, a 100% intensity of financial liberalism results in 84.4% decline in macroeconomic instability in the region following results obtained from the random-effects model. This strand of result is consistent with finding by Ngugi, Murinde and Green, (2001) and Ramcharan, (2008)[37] that financial liberalism increases market efficiency, and thus eases economic volatility.

The coefficient of real interest rate is positive, but insignificant in all the estimated panel models, including the dynamic panel regressions. The positive sign suggests that a high level of real interest rate increases the likelihood of strategic default on loans with dire implication for investment and employment condition. Our finding can be implied from the deleterious effect of high interest rate spread on economic growth in studies like Mattesini, (1996); Mwaura, Ngugi and Njenga, (2009); and Obamuyi and Olorunfemi, (2011). A wide interest rate gap, for example, makes cost of funds relatively more expensive, and hence can generate uncertainty about savings and investment. This invariably increases unemployment due to fall in business expansion as cost rises. In sum, upward movements in real interest rate may raise the level of macroeconomic instability.

The coefficient of inflation is positive and highly significant at 1% level in the traditional panel and dynamic panel methods. The result from the panel estimation confirms the detrimental effects of inflation, such that a 10% rise in inflation worsens the misery index by about 9.3%, on average. This finding is similar to conclusion in studies by Gylfason and Herbertsson, (1996); Bruno and Easterly, (1998); Berube and Cote, (2000). High inflation reduces the value of real savings and squeezes returns from capital investment, consequently discourages financial intermediation, investment, which worsens spate of macroeconomic misery. See also Hadjimichael and Ghura, (1995); Ogbokor, (2004); Ahmed and Islam, (2010). The existence of high and structurally-induced price increases in most African countries gives credence to this finding.

[37] Ramcharan (2008)'Bank competition and the real cost of interest rate movements'cited in IMF (2008) analysis on structural reforms and economic performance in advanced and developing countries.

The coefficient of government consumption expenditure, representing size of government intervention, is mixed, suggesting that government through its activities can both propagate and reduce economic instability in SSA countries. From the dynamic panel models, the coefficient of government intervention size is positive and significant, but only at 10% level in the two-step systems GMM model, suggesting that increases in public sector size by 100% negatively affect economic stability by 10.1%. However, the coefficient of government intervention is negative and not significant in both the fixed-effects and random-effects models. The result shows that government spending could aptly be used for stabilisation purpose, especially in environment with strong institutional quality and perfect information. That government intervention impacts economic stability negatively may be plausible in the African context following the way such spending is financed. Government borrowing from the domestic financial market increases competition for scarce resources, thereby raising cost of funds and crowding-out private credit. In consequent, constrains private sector to source for loans from the curb market, where funds for long-term financing are unavailable and interest rate higher than the formal credit market. This hinders capital formation/ investment, lowers productivity/returns, while also leading to increase in risk of strategic default by private sector participants (see Chipeta, 1994; Masson, Bayoumi and Samiei, 1998). Raising tax to finance government spending could also affect individual and business investments decisions, with adverse implication for employment and profit. The unprecedented monetisation of export proceeds in resource-rich SSA countries to finance spending over the years resulted in double-digit inflation, high fiscal indiscipline and debt overhang in SSA, culminating in economic growth drag. See studies like Iyoha, (1992); Anyanwu, et al., (1997); Stevens, (2003).

The coefficient of natural resource rent is negative in all panel models, suggesting that the use of natural resources proceeds can play a stabilising role in the sampled SSA countries. The coefficient is significant in the fixed-effects and random-effects models, and not in both the one-step systems GMM and two-step systems GMM models, suggesting that a 100% increase in resource rent reduces macroeconomic uncertainties by as much as 14.1%, 15.7%, 2.5% and 1.8%, respectively. This finding is in consonance with Rostow, (1961); Lewis, (1989); Krueger, (1980); Stevens, (2003); Ploeg and Poelhekke, (2009) study that find evidence of a positive direct

effect of natural resource dependence on economic growth and stability, after controlling for volatility. However, a vast number of influential studies found resource dependence to hinder economic development as voracity-effect outweighs the windfall-gains. These studies include Pinto, (1987); Sachs and Warner, (1995; 1997; 1998); Elbadawa and Ndulu, (1994); Tornell and Lane, (1999); Auty, (2001); Iyoha and Oriakhi, (2002); Sala-i-Martin and Subramanian, (2003); Collier and Hoeffler, (2005). In light of the conflicting findings, this study, therefore agrees that the resource curse thesis is not an iron law (Auty, 1994a), and that resource abundance does not have innately damaging effects on economic performance (Sachs and Warner, 1997; Gylfason, 2004), but a strong recurrent tendency that can be and has been avoided with careful management of mineral windfall. Countries known to have avoided resource-curse are Botswana, Malaysia, Norway, Indonesia, Australia and Canada, as they implemented sound pro-development strategies (Ross, 2001).

The coefficient of human capital is positive and highly significant in explaining the occurrence of macroeconomic instability in both the traditional and dynamic panel models, respectively. The result from the dynamic panel model suggests that a 100% increase in manpower training in SSA raises the level of uncertainties by 12.9%. To capture this occurrence, this study proposes the term human capital-misery trap syndrome, to denote the positive association of higher human capital and macroeconomic instability. We know that this result is counter-intuitive to arguments by most development economists, that capital formation, whether accumulation of human or physical assets, propels productivity and economic stability (see Barro, 1991; Mankiw, Romer and Weil, 1992; World Bank, 1995; Adedeji and Bamidele, 2003). The finding may be explained through the negative indirect transmission that exists between social and economic factors. Most SSA countries is characterised by low income, undue structural bottlenecks, spiralling population growth with minimal employment opportunities for trained manpower. High unemployment rate often provides a vent for civil conflicts and economic uncertainties (Oyefusi, 2007). Also, the social problem may induce government to hold higher fiscal deficit to keep pace with demand for social amenities. Increase public sector operation in the financial system may crowd-out private-sector investments, thereby resulting in labour unemployment and economic instability. This is especially so when government spending are not on projects that are pro-development.

Robustness and Sensitivity Checks:

a) Effects of individual financial reform policy on macroeconomic instability

The result is reported in *Appendix 2, Column E.* The coefficients representing policy on banking sector regulations/supervision, privatization and capital account openness were found to be negative and statistically significant, implying that these policies can be used to reduce the scourge of economic uncertainties amongst SSA countries. This finding indicates that financial reform which intensifies banking regulation, capital account openness and privatization of the banking sector would reduce the scourge of economic uncertainties and instability in the region. The coefficient of interest rate control is also negative, but not significant; suggesting that financial repression strategy can be advantageous if well executed (Stiglitz, 1994). However, policies on credit controls and setting of excessively high reserve requirements, government restriction on entrance into the domestic banking system, and policy on securities markets growth adversely affect economic stability in sampled SSA countries. High reserve requirements, entry barriers to the banking system competition and exposure to securities market can, on average, result in economic uncertainties in an unstable institutional and macroeconomic environment. Thus, the decision by most central banks in SSA for financial institutions to keep high reserves can be counterproductive as it can hinder credit allocation, investment and productivity, which may lead to high unemployment.

b) Controlling for income and stock market effects

The result is reported in *Appendix 4D.* Classifying countries according to income groupings reveals mixed effects of financial reform on macroeconomic instability in SSA. Our estimated model shows that policies of financial reform adversely influence economic confidence (stability) in both lower-middle- and upper-middle income countries. Beck, Lundberg and Majnoni, (2001) also finds evidence that financial intermediaries magnify the impact of inflation volatility in low- and middle-income countries. However, raising level of financial liberalism reduces economic uncertainties in low income economies, although coefficient is not significant, such that a marginal rise in intensity of financial liberalisation would drive down economic uncertainties by 2.9%. Studies that show financial development can play an important role in dampening the impact of external shocks on domestic economy include

Aghion, et. al.,(2005). Furthermore, Beck, Lundberg and Majnoni, (2001) finds weak evidence that financial intermediaries dampen the effect of terms of trade volatility. Increasing the intensity of policies of financial reform in lower-middle and upper-middle income SSA economies weaken economic confidence by 92.9% and 117.0%, respectively. This indicates that developed economies are more susceptible to financial and economic crisis, due to greater degree of interconnectivity in productive structures. See studies by Singh, (1997); Demirgüç-Kunt and Detragiache, (1998); and Kaminsky and Schmukler, (2002) noted that financial liberalisation makes the financial system more fragile which may not enhance investment and long-term economic growth. Countries in higher income groups may likely be prone to financial crisis due to existence of greater financial sophistication and products as well as higher foreign participation, like in South Africa. Beck, Degryse and Kneer, (2014) finds that over shorter-time horizons, a large financial sector stimulates growth at the cost of higher volatility in high-income countries.

The result for stock market effects analysis is reported in *Appendix 5C*. From the results, the coefficient of aggregate financial reform (FINR) is positive in all models for the panel of countries with domestic stock market. FINR variable was only significant at 5% level in the dynamic panel model. The impact of financial reform on macroeconomic instability was positive and significant at the 1% level in South Africa. The finding implies that financial reform increases the possibility of macroeconomic instability in sampled SSA countries. The presence of stock market increases the extent of economic openness of a country, and as such countries with stock exchanges become exposed to vagaries in the international capital market. As it stand, most countries in SSA have varying level of stock market sophistication and particularly have experienced increased number of foreign participation due to abiding interest rate differentials in emerging economies. The effects of the 2008 financial crisis, for example, led to severe economic uncertainties in most SSA countries, Nigeria and South Africa inclusive, as foreign hedge funds divested from the respective stock exchanges in the continent. The Pebble-Ripple Effect of the crisis led to the near-collapse of most emerging economies, with far-reaching economic misalignment.

Table 5.8a: Traditional Panel Results of Financial Sector Reform and Macroeconomic Instability (MISR)

Panel Estimation of the MISR* Model						
Variables	***Fixed Effect Model***			***Random Effect Model***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	-1.892	-1.223	0.222	0.711	0.503	0.615
Financial Reform Index (FINR)	-0.161	-0.306	0.759	-0.844	-2.557	0.011**
Real Interest Rate (RINTR)	0.001	0.151	0.881	0.005	0.661	0.508
Inflation (INF)	0.936	9.381	0.000***	0.941	9.755	0.000***
Government Consumption (GCON)	-0.084	-1.224	0.221	-0.097	-1.494	0.135
Natural Resources (NATR)	-0.141	-1.905	0.057**	-0.157	-2.853	0.004***
Secondary School Enrolment	0.221	8.644	0.000***	0.163	7.947	0.000***
No. of Observation	462			462		
R-Square	0.973			0.961		
Adjusted R-Square	0.971			0.96		
F-Statistics (Prob)	29.65 (0.000***)			18.49 (0.000***)		
Hausman Test	Chi^2 (9) = 24.87 (0.0004)					
MISR here is Misery Index						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

Table 5.8b: Dynamic Panel Results of Financial Sector Reforms and Macroeconomic Instability

Panel Estimation of the MISR Model (Dynamic Models)						
Variables	***With one lag value***			***With two lag values***		
	Coefficient	***t-stats***	***Prob.***	***Coefficient***	***t-stats***	***Prob.***
Constant term	*-3.742*	*-3.788*	*0.000****	*-4.865*	*-5.059*	*0.000****
Lagged Value of MISR (-1)	*0.051*	*3.991*	*0.000****	*0.038*	*2.822*	*0.005****
Lagged Value of MISR (-2)	*N/A*	*N/A*	*N/A*	*0.022*	*1.821*	*0.069***
Financial Reform Index (FINR)	*0.553*	*1.914*	*0.056***	*0.607*	*2.201*	*0.028***
Real Interest Rate (RINTR)	*0.002*	*0.323*	*0.746*	*0.002*	*0.292*	*0.769*
Inflation (INF)	*0.923*	*7.236*	*0.000****	*0.94*	*7.417*	*0.0000****
Government Consumption (GCON)	*0.055*	*0.963*	*0.335*	*0.101*	*1.804*	*0.071***
Natural Resources (NATR)	*-0.025*	*-0.916*	*0.36*	*-0.018*	*-0.671*	*0.502*
Secondary School Enrolment	*0.129*	*9.762*	*0.000****	*0.129*	*10.161*	*0.000****
No. of Observation		*448*			*434*	
R-Square		*0.959*			*0.662*	
Adjusted R-Square		*0.958*			*0.661*	
F-Statistics (Prob)		*98.02* (0.000***)			*134.32* (0.000***)	
Hausman Test		*N/A*			*N/A*	
Sargan Test					*Chi^2 (18) = 59.04 (0.756)*	
Test for Second Order Autocorrelation (The null hypothesis is that there no Autocorrelation)					*Z = -19.78 (0.982)*	
MISR here is Misery Index						
Note that the fixed effects model is in levels while the dynamic model is estimated based on Arellano and Bond procedure.						

*, **, *** indicates statistical significance at 10%, 5% and 1% levels.

Source: Author's Computation

5.3.6 CAUSALITY TEST: Financial Reform, Financial Development and Economic Performance in SSA

The third and final objective of this study is a country-specific causality test among financial sector reform, financial development and economic performance for each sampled countries. Theoretical literature holds that there exists exciting interrelationship between finance and real economy, thus imperative for SSA to aid policy formulation. This objective was investigated using Vector Autoregressive (VAR) modelling framework irrespective of existence of cointegrating relationships since our main focus is to ascertain the nature of association amongst the aforementioned variables. To avoid spurious correlation in test of the nature and direction of causality, this study followed the three standard procedures in literature for causality. First, the test for stationarity was conducted on each of the variables, namely domestic financial sector reform, financial development (using ratio of private credit to GDP as proxy), real per capita GDP, gross capital formation, human development and macroeconomic instability (proxy by misery index). Second, cointegration test was conducted to establish whether long-run relationships exist among these variables of interest. Lastly, the VAR model was estimated to investigate the nature and direction of causality amongst the variables. To further enhanced the knowledge on relationship between several components in the VAR framework, the variance decomposition and impulse response function, which relates to the question of how useful one variable (or sets of variables) is for forecasting another variable (or set of variables) were also estimated for each of the 14 SSA countries used in the study.

Unit Root and Cointegration Tests Analysis

The study employed the Augmented Dickey-Fuller (ADF) to conduct the country-specific unit root tests to explore the time-series properties of each country's data. The results of the unit root tests for each country are presented in *Table 5.9A* below. The results show that the variables are stationary at first difference in all countries, that is the variables are integrated of order one, I(1). Johansen cointegration test procedure was adopted to establish the existence of long-run relationships among the six (6) chosen variables, namely financial reform, financial development, real per capita GDP, gross capital formation, human development and macroeconomic instability.

Results of the cointegration tests are presented in *Table 5.9B.* The presence of cointegrating vector, that is, the presence of long-term relationship is investigated by comparing the Trace and Maximum-Eigen statistical values and the critical values of 5%. Ghana and Kenya show no cointegrating relationships going by the Maximum Eigen Statistic at the 5% critical value, but one meaningful cointegrating equation exists in Kenya when the Trace Statistic is used. Thus, only in Ghana that the null hypothesis of no cointegration among the variables is accepted, and we conclude that there is no long-term relationship among the variables. The remaining countries in our sample provided varying levels of cointegrating relationships, indicating that there is a long-term relationship among the variables. Hence, using the aforementioned test statistics, we thus reject the null hypothesis of no cointegration in favour that there is cointegrating relationships at the 5% significant level among the variables. Therefore, the corresponding numbers of cointegrating equations (in *Table 5.9*) show the possible number of meaningful long-term equations that can be derived from the 6 chosen variables of the study.

Table 5.9A: Results of Unit Root Test (Augmented Dickey-Fuller Test)

S/N	Countries	Financial Development					Financial Refrom					Gross Capital Formation					Gross Domestic Product					Human Development					Macroeconomic Instability					Overall Remarks
		ADF Statistics (t-stat)	Prob.	Critical Values			ADF Statistics (t-stat)	Prob.	Critical Values			ADF Statistics (t-stat)	Prob.	Critical Values			ADF Statistics (t-stat)	Prob.	Critical Values			ADF Statistics (t-stat)	Prob.	Critical Values			ADF Statistics (t-stat)	Prob.	Critical Values			
				1%	5%	10%			1%	5%	10%			1%	5%	10%			1%	5%	10%			1%	5%	10%			1%	5%	10%	
1	Burkina Faso	-4.361	0.008	-4.285	-3.563	-3.215	-4.637	0.004	-4.273	-3.551	-3.212	-6.744	0.0000	-4.285	-3.563	-3.215	-6.605	0.0000	-4.285	-3.563	-3.215	-5.416	0.0006	-4.285	-3.563	-3.215	-5.262	0.0010	-4.310	-3.574	-3.222	I(1)
2	Cameroon	-4.876	0.0024	-4.285	-3.563	-3.215	-3.607	0.0456	-4.285	-3.563	-3.215	-6.730	0.0000	-4.285	-3.563	-3.215	-6.291	0.0002	-4.394	-3.612	-3.243	-5.789	0.0002	-4.285	-3.563	-3.215	-7.100	0.0000	-4.285	-3.563	-3.215	I(1)
3	Cote d' Ivore	-4.716	0.0035	-4.285	-3.563	-3.215	-4.433	0.007	-4.273	-3.558	-3.124	-4.635	0.0043	-4.285	-3.563	-3.215	-3.944	0.0219	-4.285	-3.563	-3.215	-6.725	0.0000	-4.285	-3.563	-3.215	-7.889	0.0000	-4.285	-3.563	-3.215	I(1)
4	Ethiopia	-4.259	0.0106	-4.285	-3.563	-3.215	-3.990	0.0198	-4.285	-3.563	-3.215	-9.055	0.0000	-4.285	-3.563	-3.215	-4.722	0.0035	-4.285	-3.563	-3.215	-7.204	0.0000	-4.285	-3.563	-3.215	-8.171	0.0000	-4.285	-3.563	-3.215	I(1)
5	Ghana	-5.035	0.0017	-4.297	-3.568	-3.218	-5.035	0.0017	-4.297	-3.568	-3.218	-6.522	0.0000	-4.297	-3.568	-3.218	-3.285	0.087	-4.273	-3.558	-3.212	-6.495	0.0000	-4.285	-3.563	-3.215	-6.936	0.0000	-4.297	-3.568	-3.218	I(1)
6	Kenya	-6.971	0.0000	-4.285	-3.563	-3.215	-4.670	0.0040	-4.285	-3.563	-3.215	-3.661	0.0424	-4.324	-3.581	-3.225	-3.307	0.0838	-4.285	-3.563	-3.215	-5.818	0.0002	-4.285	-3.563	-3.215	-8.774	0.0000	-4.297	-3.568	-3.218	I(1)
7	Madagascar	-4.805	0.003	-4.273	-3.558	-3.212	-5.259	0.0010	-4.310	-3.574	-3.222	-6.418	0.0000	-4.285	-3.563	-3.215	-6.663	0.0000	-4.285	-3.563	-3.215	-6.064	0.0001	-4.285	-3.563	-3.215	-6.134	0.0001	-4.297	-3.568	-3.218	I(1)
8	Mozambique	-5.064	0.0015	-4.285	-3.563	-3.215	-4.667	0.004	-4.273	-3.558	-3.212	-4.136	0.0142	-4.285	-3.563	-3.215	-4.328	0.0090	-4.285	-3.563	-3.215	-6.540	0.0000	-4.285	-3.563	-3.215	-4.667	0.0038	-4.273	-3.558	-3.212	I(1)
9	Nigeria	-5.718	0.0003	-4.310	-3.574	-3.222	-5.681	0.0003	-4.285	-3.563	-3.215	-5.078	0.0015	-4.297	-3.568	-3.218	-5.897	0.0002	-4.285	-3.563	-3.215	-4.895	0.002	-4.273	-3.558	-3.212	-7.072	0.0000	-4.297	-3.568	-3.218	I(1)
10	Senegal	-4.926	0.0022	-4.297	-3.568	-3.218	-4.108	0.0154	-4.297	-3.568	-3.218	-6.274	0.0001	-4.285	-3.563	-3.215	-6.671	0.0000	-4.285	-3.563	-3.215	-6.304	0.0001	-4.285	-3.563	-3.215	-8.113	0.0000	-4.285	-3.563	-3.215	I(1)
11	South Africa	-5.598	0.0004	-4.285	-3.563	-3.215	-5.915	0.0002	-4.285	-3.563	-3.215	-7.531	0.0000	-4.285	-3.563	-3.215	-5.143	0.0012	-4.285	-3.563	-3.215	-5.385	0.0007	-4.285	-3.563	-3.215	-8.734	0.0000	-4.285	-3.563	-3.215	I(1)
12	Tanzania	-4.376	0.012	-4.374	-3.603	-3.238	-5.202	0.0011	-4.285	-3.563	-3.215	-4.271	0.0103	-4.285	-3.563	-3.215	-3.718	0.003	-4.285	-3.563	-3.215	-4.139	0.003	-4.339	-3.588	-3.229	-5.838	0.0002	-4.285	-3.563	-3.215	I(1)
13	Uganda	-5.155	0.001	-4.297	-3.568	-3.218	-4.713	0.0036	-4.285	-3.563	-3.215	-7.230	0.0000	-4.310	-3.574	-3.222	-3.387	0.0716	-4.285	-3.563	-3.215	-6.434	0.0000	-4.285	-3.563	-3.215	-3.401	0.0703	-4.297	-3.568	-3.218	I(1)
14	Zimbabwe	-6.133	0.0001	-4.285	-3.563	-3.215	-3.524	0.0592	-4.394	-3.612	-3.243	-5.252	0.0009	-4.285	-3.563	-3.215	-4.378	0.0080	-4.285	-3.563	-3.215	-5.013	0.0017	-4.285	-3.563	-3.215	-7.414	0.0000	-4.285	-3.563	-3.215	I(1)

Note: The null hypothesis is that the series is non-stationary, or contains a unit root. The rejection of the null hypothesis is based on MacKinnon (1996) critical values *Significant at 10%, **Significant at 5%,***Significant at 1%.

Source: Author's Computation

Table 5.9B: Results of Johansen Cointegration Tests

Country	Eigen value	Trace Statistic	5% Critical Value	No of CE(s)	Eigen value	Max. Eigen Statistic	5% Critical Value	No of CE(s)
Burkina Faso	0.463251	42.11477	47.85613	1	0.463251	18.6667	27.5843	1
Cameroon	0.537161	47.79503	47.85613	2	0.537161	23.8816	27.5843	2
Cote d'Ivoire	0.729803	89.16859	99.81889	1	0.594697	24.3842	27.5843	2
Ethiopia	0.624113	39.74051	39.79707	2	0.624113	25.4401	26.1316	2
Ghana	0.615562	93.74917	95.75366	0	0.615562	29.6351	40.0775	0
Kenya	0.665819	66.25745	69.81889	1	0.703732	37.7111	40.0775	0
Madagascar	0.524237	36.92692	47.85613	1	0.524237	20.7993	27.5843	1
Mozambique	0.125435	2.948631	3.841466	5	0.125435	2.94863	3.84146	5
Nigeria	0.496028	43.22095	47.85613	2	0.668490	33.1229	33.8768	1
South Africa	0.528975	41.84037	47.85613	2	0.528975	23.3381	27.5843	2
Senegal	0.446928	27.91157	29.79707	3	0.656895	33.1613	33.8768	1
Tanzania	0.533944	29.68062	29.79707	3	0.533944	16.0324	21.1316	3
Uganda	0.960086	109.0557	119.8188	1	0.688991	23.3586	27.5843	2
Zimbabwe	0.773785	79.15028	89.81889	1	0.570199	20.2663	27.5843	2

Note: CE means cointegrating equations.
Source: Author's Computation

Presentation of Results on VAR Causality Analysis

In this study, the test for causality among the variables (financial reform, financial development and economic performance indicators) was conducted using the Vector Autoregressive (VAR) framework. This study assumed a lag-length of one (1) for the causality test since the chief focus of analysis is to explore the nature of long-run association among the variables employed, and not in any way to ascertain the speed of adjustment of the model from possible short-run disequilibrium.

Causality Test: Financial Sector Reform Vs Financial Development

From the causality results in *Table 5.10,* unidirectional causality running from financial sector reform to financial development is observed in five countries; namely Burkina-Faso, Cameroon, Ethiopia, Kenya and Zimbabwe. This implies that for these groups of countries, financial reform causes financial sector to develop. This result is consistent with the studies by McKinnon, (1973); Shaw, (1973); Arestis and Glickman, (2002); Chinn and Ito, (2002, 2005), Oyaromade (2005); Tressel and Detragiache, (2008). Furthermore, the results suggest causality runs from financial development to financial

reform in Mozambique and Senegal. This implies that for both countries the deepening of the financial sector causes the need to initiate and implement financial reform measures. Bi-directional causation exists between financial sector reforms and financial development in Cote d'Ivoire and South Africa, providing evidence of reversed causality. However, for countries like Ghana, Madagascar, Nigeria, Tanzania and Uganda, the results indicate no clear flow of causation from financial sector reforms to financial development in the period under review. The finding relating to this group of countries does not suggest that the process of financial reform does not cause financial development, and vice versa, but that causation may be through effect on other broad-based macroeconomic indicators.

Causality Test: Financial Sector Reform Vs Real Per Capita GDP

The results in *Table 5.11,* suggest that causality runs directly from financial sector reform to growth in real per capita GDP in Ghana, Kenya, Madagascar, Nigeria and South Africa. This implies that financial sector reform causes growth in real per capita income in those countries. *This study would term this outcome as 'financial reform-led economic growth.* However, in Tanzania, the VAR causality result suggests that growth in real per capita income stimulates financial reform process. It means that for this country, the need for financial reform follows directly from an observation of growth in trajectory of economic activities *(Economic growth-led financial sector reform).* However, there is no clear flow of causation between financial sector reform and growth in per capita GDP in Burkina Faso, Cameroun, Cote d'Ivoire, Ethiopia, Mozambique, Senegal, Uganda and Zimbabwe.

Causality Test: Financial Sector Reform Vs Gross Capital Formation

Table 5.12 shows the causality test results of financial reform and gross capital formation. It shows that reforms in the financial sector causes growth in gross capital formation (GCF) in Ethiopia, but causality runs from GCF to financial reforms in Cameroun, Ghana, Kenya, Senegal and Tanzania, whereas bi-directional causation exist in Mozambique and South Africa. The result shows that financial reform improves rate of capital formation through more efficient credit allocation that allow investors to enjoy greater financial flexibility. The unidirectional causality running from GCF to financial reforms, suggests that financial reform responds to increases in capital formation in those

countries. Studies with similar finding are limited. However, there is no clear flow of causation between financial reforms and GCF in the remaining countries namely; Burkina Faso, Cote d'Ivoire, Madagascar, Nigeria, Uganda and Zimbabwe.

Causality Test: Financial Sector Reform Vs Human Development

From the VAR causality results in *Table 5.13,* there is a unidirectional causality running from financial reform to human development in five countries namely; Cameroun, Kenya, Mozambique, Senegal, South Africa and Zimbabwe. The results show that financial reform directly causes human development in these SSA countries. There is evidence of either a reversed or bilateral causality in any of the countries surveyed. There is no clear flow of causation between financial sector reforms and Human development in countries like Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Madagascar, Tanzania and Uganda.

Causality Test: Financial Sector Reform Vs Macroeconomic Instability

From the VAR causality test results in *Table 5.14,* only three countries namely; Kenya, Madagascar and Tanzania, provide evidence that financial reform causes macroeconomic instability. In other words, 21.4% of the countries studies show that financial reform causes economic instability, whereas macroeconomic instability causes financial reforms in Nigeria and Senegal, while the remaining countries provide no clear evidence that financial reform leads directly to economic uncertainty in the period under study. Financial reform in an unstable macro-economic environment, with weak institutions is known to widen the lending and deposit interest rate gap, thereby leading to inefficient economic outcomes. The result reinforces the fact that poorly conceived reform of the financial sector that encourages substantial political interference in the operation of financial institutions can intensify the spate of macroeconomic instability in developing countries, like SSA.

Causality Test: Financial Development Vs Real Per Capita GDP

With regards to the relationship between financial development and per capita income, the VAR causality test results in *Table 5.15,* show that growth in real per capita GDP causes expansion in credit to the private sector (financial development) in four countries, namely Burkina Faso, Cote d'Ivoire, South Africa and Uganda. This confirms the

demand-following hypothesis. However, financial development causes growth in real income per capita only in Cameroun, which confirms the supply-following hypothesis. Bi-directional causation was observed in Senegal, implying the existence of feed-back effects between real per capital income and financial development. This supports studies by Calderon and Liu, (2003); Odhiambo, (2005); Akinlo and Egbetunde, (2010) that finds bi-directional causality between financial development and per capita income growth in a number of developing countries. However, the VAR causality results shows no clear flow of causation between financial development and real per capita income in eight countries, namely Ethiopia, Ghana, Kenya, Madagascar, Mozambique, Nigeria, Tanzania and Zimbabwe. This essentially supports Lucas, (1988) that dismissed finance as an over-stressed determinant of economic growth.

Causality Test: Financial Development Vs Gross Capital Formation

More so, *Table 5.16* shows that a unidirectional causality runs from gross capital formation (GCF) to financial development in Burkina Faso and Kenya, representing 14.2% of sampled countries. The direction of causality running from financial development to GCF was observed only in Zimbabwe, while bi-directional relationship exists between financial development and GCF in South Africa and Tanzania, with no clear causal-effect in the remaining nine countries namely, Cameroun, Cote d'Ivoire, Ethiopia, Ghana, Madagascar, Mozambique, Nigeria and Uganda.

Causality Test: Financial Development Vs Human Development

The VAR causality test results in *Table 5.17* shows a unidirectional causality from financial development to human development in Tanzania and Zimbabwe. This implies that for both countries, growth in supply of credit to the private sector (that is, financial development) causes long-term progress in level of human development. The result, thus, suggests that when access to finance is enhanced, economic agents would likely engage more in productive entrepreneurial activities that would potentially improve human capabilities along three (3) dimensions like leading a long and healthy life, access to knowledge, as well as have a decent standard of living. Meanwhile, for Cameroon, Madagascar and Mozambique, improvements in human development causes financial development. This result suggests that improving human development and capabilities cause growth in financial development in those economies. For the remaining countries,

there is no clear causation between financial development and human development in the period under review. These countries include Burkina-Faso, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Nigeria, Senegal, South Africa and Uganda.

Causality Test: Financial Development Vs Macroeconomic Instability

VAR causality test between financial development and macroeconomic instability presented in *Table 5.18* shows that financial development causes economic uncertainties in six (6) countries, namely Cameroun, Cote d'Ivoire, Madagascar, Senegal, Tanzania and Uganda, suggesting that poorly developed financial systems, amidst severe imperfect information, may cause output variability, and thus macroeconomic uncertainties. But, for both Nigeria and South Africa, a reverse causality was observed, while Kenya shows evidence of bi-causality. This implies that distortions in credit allocation process causes output fluctuations which also have a feedback-effect on financial development. This support finding that financial development is impaired in countries with weak institutions and unstable macroeconomic environment. The reverse causality found in both Nigeria and South Africa and bi-causality in Kenya allude to the continual focus of monetary authorities to broaden the financial sectors so as to forestall effects of macroeconomic misalignments on the domestic financial systems. However, there is no clear evidence that financial development causes loss of confidence, and vice versa, in countries like Burkina Faso, Ethiopia, Ghana, Mozambique and Zimbabwe. This may indicate that financial systems are at best not distortionary for those countries in the period under review.

Table 5.10: Results from VAR Causality Test: FINR Vs FIND

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	13.5721	0.0011	FINR → FIND
	H_{02}	0.7059	0.7026	
Cameroon	H_{01}	6.0265	0.0491	FINR → FIND
	H_{02}	1.8831	0.3900	
Cote d' Ivore	H_{01}	8.6395	0.0133	FINR ⇄ FIND
	H_{02}	4.6112	0.0997	
Ethiopia	H_{01}	7.8966	0.0193	FINR → FIND
	H_{02}	3.3566	0.1867	
Ghana	H_{01}	2.7028	0.2589	No Causality
	H_{02}	0.0221	0.9890	
Kenya	H_{01}	7.1003	0.0287	FINR → FIND
	H_{02}	2.8968	0.2349	
Madagascar	H_{01}	1.6025	0.4488	No Causality
	H_{02}	0.8844	0.6426	
Mozambique	H_{01}	1.0556	0.5899	FINR ← FIND
	H_{02}	5.0002	0.0821	
Nigeria	H_{01}	0.4180	0.8114	No Causality
	H_{02}	0.4307	0.8062	
Senegal	H_{01}	1.8598	0.3946	FINR ← FIND
	H_{02}	8.9224	0.0115	
South Africa	H_{01}	6.5703	0.0374	FINR ⇄ FIND
	H_{02}	6.6484	0.0360	
Tanzania	H_{01}	0.8220	0.6630	No Causality
	H_{02}	3.3290	0.1893	
Uganda	H_{01}	0.4344	0.8048	No Causality
	H_{02}	0.7289	0.6946	
Zimbabwe	H_{01}	8.5334	0.0140	FINR → FIND
	H_{02}	0.3163	0.8537	

Note: FINR (Financial reform), FIND (Financial development**).**
Null Hypothesis: H_{01}: FINR does not cause FIND, and H_{02}: FIND does not cause FIN.
Where the notation; X → Y means, variable X causes Y. values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

Table 5.11: Results from VAR Causality Test: FINR Vs RGDP

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	3.2416	0.1977	No Causality
	H_{02}	1.4907	0.4746	
Cameroon	H_{01}	1.3734	0.5032	No Causality
	H_{02}	2.0531	0.3582	
Cote d' Ivore	H_{01}	2.3332	0.3114	No Causality
	H_{02}	0.9402	0.6249	
Ethiopia	H_{01}	0.7557	0.6853	No Causality
	H_{02}	3.8999	0.1423	
Ghana	H_{01}	7.2942	0.0261	FINR → RGDP
	H_{02}	0.2172	0.8971	
Kenya	H_{01}	11.0987	0.0039	FINR → RGDP
	H_{02}	0.3553	0.8372	
Madagascar	H_{01}	10.4941	0.0053	FINR → RGDP
	H_{02}	2.2788	0.3200	
Mozambique	H_{01}	2.8135	0.2449	No Causality
	H_{02}	0.2640	0.8763	
Nigeria	H_{01}	11.2553	0.0036	FINR → RGDP
	H_{02}	2.1933	0.3340	
Senegal	H_{01}	2.0723	0.3548	No Causality
	H_{02}	1.3142	0.5183	
South Africa	H_{01}	5.6943	0.0580	FINR → RGDP
	H_{02}	0.6752	0.7135	
Tanzania	H_{01}	0.0340	0.9831	FINR ← RGDP
	H_{02}	5.6779	0.0585	
Uganda	H_{01}	1.8009	0.4064	No Causality
	H_{02}	1.4318	0.4888	
Zimbabwe	H_{01}	3.1694	0.2050	No Causality
	H_{02}	0.5235	0.7697	

Note: FINR (Financial reform), RGDP (Real per capital GDP)**.**
Null Hypothesis: H_{01}: FINR does not cause RGDP, and H_{02}: RDGP does not cause FINR.
Where the notation; X → Y means, variable X causes Y. values.
*Significant at 10%, **Significant at 5%, ***Significant at 1%.
Source: Author's Computation

Table 5.12: Results from VAR Causality Test: FINR Vs GCF

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	0.5155	0.7728	No Causality
	H_{02}	1.6528	0.4376	
Cameroon	H_{01}	2.6605	0.2644	FINR ← GCF
	H_{02}	8.4873	0.0144	
Cote d' Ivore	H_{01}	1.1716	0.5567	No Causality
	H_{02}	0.0858	0.9580	
Ethiopia	H_{01}	6.5956	0.0370	FINR → GCF
	H_{02}	0.3699	0.8312	
Ghana	H_{01}	1.6250	0.4437	FINR ← GCF
	H_{02}	4.6506	0.0978	
Kenya	H_{01}	1.5118	0.4696	FINR ← GCF
	H_{02}	6.3221	0.0424	
Madagascar	H_{01}	0.9287	0.6286	No Causality
	H_{02}	1.5939	0.4507	
Mozambique	H_{01}	5.0028	0.0820	FINR ⇄ GCF
	H_{02}	4.6790	0.0964	
Nigeria	H_{01}	0.4089	0.8151	No Causality
	H_{02}	1.3577	0.5072	
Senegal	H_{01}	2.5382	0.2811	FINR ← GCF
	H_{02}	5.4806	0.0646	
South Africa	H_{01}	11.6677	0.0029	FINR ⇄ GCF
	H_{02}	9.8317	0.0073	
Tanzania	H_{01}	10.4389	0.0054	FINR ← GCF
	H_{02}	2.4266	0.2972	
Uganda	H_{01}	0.3149	0.8543	No Causality
	H_{02}	2.5899	0.2739	
Zimbabwe	H_{01}	4.1998	0.1225	No Causality
	H_{02}	1.3128	0.5187	

Note: FINR (Financial reform), GCF (Gross Capital Formation).
Null Hypothesis: H_{01}: FINR does not cause GCF, and H_{02}: GCF does not cause FINR.
Where the notation; X → Y means, variable X causes Y. values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

Table 5.13: Results from VAR Causality Test: FINR Vs HD

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	1.9431	0.3785	No Causality
	H_{02}	0.4773	0.7877	
Cameroon	H_{01}	5.9311	0.0515	FINR → HD
	H_{02}	1.8102	0.4045	
Cote d' Ivore	H_{01}	0.4805	0.7864	No Causality
	H_{02}	2.6134	0.2707	
Ethiopia	H_{01}	1.0239	0.5993	No Causality
	H_{02}	1.3513	0.5088	
Ghana	H_{01}	3.2472	0.1972	No Causality
	H_{02}	2.7676	0.2506	
Kenya	H_{01}	5.9592	0.0508	FINR → HD
	H_{02}	4.1936	0.1228	
Madagascar	H_{01}	0.5242	0.7694	No Causality
	H_{02}	2.2680	0.3217	
Mozambique	H_{01}	6.1505	0.0462	FINR → HD
	H_{02}	3.9564	0.1383	
Nigeria	H_{01}	1.7216	0.4228	No Causality
	H_{02}	0.0072	0.9964	
Senegal	H_{01}	29.5173	0.0000	FINR → HD
	H_{02}	2.6521	0.2655	
South Africa	H_{01}	4.7815	0.0916	FINR → HD
	H_{02}	0.4708	0.7903	
Tanzania	H_{01}	3.8302	0.1473	No Causality
	H_{02}	0.0255	0.9873	
Uganda	H_{01}	0.6258	0.7313	No Causality
	H_{02}	0.7793	0.6773	
Zimbabwe	H_{01}	4.6400	0.0983	FINR → HD
	H_{02}	0.2899	0.8651	

Note: FINR (Financial reform), HD (Human Development).
Null Hypothesis: H_{01}: FINR does not cause HD, and H_{02}: HD does not cause FINR.
Where the notation; X → Y means, variable X causes Y. values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

Table 5.14: Results from VAR Causality Test: FINR Vs MIS

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	0.1380	0.9333	No Causality
	H_{02}	0.0679	0.9666	
Cameroon	H_{01}	1.0110	0.6032	No Causality
	H_{02}	1.2949	0.5234	
Cote d' Ivore	H_{01}	4.5858	0.1010	No Causality
	H_{02}	1.6046	0.4483	
Ethiopia	H_{01}	0.6450	0.7243	No Causality
	H_{02}	2.5150	0.2844	
Ghana	H_{01}	1.6250	0.4437	No Causality
	H_{02}	0.8333	0.6593	
Kenya	H_{01}	7.3831	0.0249	FINR → MIS
	H_{02}	2.8863	0.2362	
Madagascar	H_{01}	5.4223	0.0665	FINR → MIS
	H_{02}	1.3526	0.5085	
Mozambique	H_{01}	3.3146	0.1907	No Causality
	H_{02}	3.1629	0.2057	
Nigeria	H_{01}	0.6749	0.7136	FINR ← MIS
	H_{02}	5.4967	0.0640	
Senegal	H_{01}	0.0827	0.9595	FINR ← MIS
	H_{02}	5.8384	0.0540	
South Africa	H_{01}	1.5962	0.4502	No Causality
	H_{02}	1.0582	0.5891	
Tanzania	H_{01}	27.5585	0.0000	FINR → MIS
	H_{02}	0.9794	0.6128	
Uganda	H_{01}	0.6785	0.7123	No Causality
	H_{02}	0.9574	0.6196	
Zimbabwe	H_{01}	0.4747	0.7887	No Causality
	H_{02}	1.3523	0.5086	

Note: FINR (Financial reform), MIS (Macroeconomic instability**).**

Null Hypothesis: H_{01}: FINR does not cause MIS and H_{02}: MIS does not cause FINR.

Where the notation; X → Y means, variable X causes Y. values.

**Significant at 10%, **Significant at 5%, ***Significant at 1%.*

Source: Author's Computation

Table 5.15: Results from VAR Causality Test: FIND Vs RGDP

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	3.2794	0.1940	FIND ← RGDP
	H_{02}	20.7999	0.0000	
Cameroon	H_{01}	9.2895	0.0096	FIND → RGDP
	H_{02}	0.1226	0.9405	
Cote d' Ivore	H_{01}	0.8537	0.6526	FIND ← RGDP
	H_{02}	4.7031	0.0952	
Ethiopia	H_{01}	1.1714	0.5567	No Causality
	H_{02}	2.7765	0.2495	
Ghana	H_{01}	2.2218	0.3293	No Causality
	H_{02}	0.3949	0.8208	
Kenya	H_{01}	2.3722	0.3054	No Causality
	H_{02}	4.1074	0.1283	
Madagascar	H_{01}	4.4331	0.1090	No Causality
	H_{02}	0.1821	0.9130	
Mozambique	H_{01}	0.0784	0.9616	No Causality
	H_{02}	4.4767	0.1066	
Nigeria	H_{01}	3.1826	0.2037	No Causality
	H_{02}	4.0122	0.1345	
Senegal	H_{01}	5.3141	0.0702	FIND ⇄ RGDP
	H_{02}	11.0856	0.0039	
South Africa	H_{01}	0.6418	0.7255	FIND ← RGDP
	H_{02}	8.5465	0.0139	
Tanzania	H_{01}	0.5591	0.7561	No Causality
	H_{02}	0.0365	0.9819	
Uganda	H_{01}	0.1317	0.9363	FIND ← RGDP
	H_{02}	4.9651	0.0350	
Zimbabwe	H_{01}	1.3336	0.5134	No Causality
	H_{02}	3.6326	0.1626	

Note: FIND (Financial development**),** RGDP (Real per capital GDP).
Null Hypothesis: H_{01}: FIND does not cause RGDP, and H_{02}: RDGP does not cause FIND.
Where the notation; X ⟶ Y means, variable X causes Y. values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

Table 5.16: Results from VAR Causality Test: FIND Vs GCF

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	0.2781	0.8702	FIND ← GCF
	H_{02}	4.7646	0.0923	
Cameroon	H_{01}	3.3807	0.1845	No Causality
	H_{02}	0.2457	0.8844	
Cote d' Ivore	H_{01}	1.9045	0.3859	No Causality
	H_{02}	0.4066	0.8160	
Ethiopia	H_{01}	1.5976	0.4499	No Causality
	H_{02}	0.6130	0.7360	
Ghana	H_{01}	0.5038	0.7773	No Causality
	H_{02}	2.2365	0.3269	
Kenya	H_{01}	0.6566	0.7201	FIND ← GCF
	H_{02}	5.2351	0.0730	
Madagascar	H_{01}	2.9898	0.2243	No Causality
	H_{02}	0.8907	0.6406	
Mozambique	H_{01}	1.7445	0.4180	No Causality
	H_{02}	0.5794	0.7485	
Nigeria	H_{01}	0.2944	0.8631	No Causality
	H_{02}	0.8314	0.6599	
Senegal	H_{01}	0.1565	0.9247	No Causality
	H_{02}	3.4783	0.1757	
South Africa	H_{01}	9.4284	0.0090	FIND ⇄ GCF
	H_{02}	7.3131	0.0258	
Tanzania	H_{01}	10.5147	0.0052	FIND ⇄ GCF
	H_{02}	5.2271	0.0733	
Uganda	H_{01}	2.8000	0.2466	No Causality
	H_{02}	2.5944	0.2733	
Zimbabwe	H_{01}	5.0866	0.0786	FIND → GCF
	H_{02}	0.0705	0.9654	

Note: FIND (Financial development**),** GCF (Gross capital formation).
Null Hypothesis: H_{01}: FIND does not cause GCF, and H_{02}: GCF does not cause FIND.
Where the notation; X → Y means, variable X causes Y. values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

Table 5.17: Results from VAR Causality Test: FIND Vs HD

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	2.3169	0.3140	No Causality
	H_{02}	1.1367	0.5664	
Cameroon	H_{01}	2.5067	0.2855	FIND ← HD
	H_{02}	4.7503	0.0930	
Cote d' Ivore	H_{01}	2.6739	0.2626	No Causality
	H_{02}	1.3053	0.5207	
Ethiopia	H_{01}	0.3157	0.8540	No Causality
	H_{02}	1.3513	0.5088	
Ghana	H_{01}	0.4864	0.7841	No Causality
	H_{02}	1.5719	0.4557	
Kenya	H_{01}	0.5277	0.7681	No Causality
	H_{02}	1.5882	0.4520	
Madagascar	H_{01}	2.4380	0.2955	FIND ← HD
	H_{02}	6.0793	0.0479	
Mozambique	H_{01}	0.6869	0.7093	FIND ← HD
	H_{02}	4.7577	0.0927	
Nigeria	H_{01}	0.9328	0.6273	No Causality
	H_{02}	3.4543	0.1778	
Senegal	H_{01}	0.9861	0.6107	No Causality
	H_{02}	2.2891	0.3184	
South Africa	H_{01}	0.9180	0.6319	No Causality
	H_{02}	1.1151	0.5726	
Tanzania	H_{01}	7.6352	0.0220	FIND → HD
	H_{02}	1.8563	0.3953	
Uganda	H_{01}	2.0722	0.3548	No Causality
	H_{02}	2.9488	0.2289	
Zimbabwe	H_{01}	5.7100	0.0576	FIND → HD
	H_{02}	0.2270	0.8927	

Note: FIND (Financial development), HD (Human development).
Null Hypothesis: H_{01}: FIND does not cause HD, and H_{02}: HD does not cause FIND.
Where the notation; X ⟶ Y means, variable X causes Y values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

Table 5.18: Results from VAR Causality Test: FIND Vs MIS

Country	Null Hypothesis	Chi-Square	P-Value	Conclusion
Burkina Faso	H_{01}	0.6907	0.7080	No Causality
	H_{02}	0.2276	0.8925	
Cameroon	H_{01}	7.1524	0.0280	FIND → MIS
	H_{02}	3.2691	0.1950	
Cote d' Ivore	H_{01}	4.9529	0.0840	FIND → MIS
	H_{02}	3.5930	0.1659	
Ethiopia	H_{01}	0.3936	0.8213	No Causality
	H_{02}	4.0155	0.1343	
Ghana	H_{01}	1.6250	0.4437	No Causality
	H_{02}	0.8333	0.6593	
Kenya	H_{01}	4.8569	0.0882	FIND ⇄ MIS
	H_{02}	9.6162	0.0082	
Madagascar	H_{01}	8.7000	0.0129	FIND → MIS
	H_{02}	1.4470	0.4851	
Mozambique	H_{01}	3.2125	0.2006	No Causality
	H_{02}	0.8089	0.6673	
Nigeria	H_{01}	3.6010	0.1652	FIND ← MIS
	H_{02}	5.3265	0.0697	
Senegal	H_{01}	8.3000	0.0158	FIND → MIS
	H_{02}	1.2826	0.5266	
South Africa	H_{01}	1.3175	0.5175	FIND ← MIS
	H_{02}	4.6302	0.0988	
Tanzania	H_{01}	9.1463	0.0103	FIND → MIS
	H_{02}	0.2673	0.8749	
Uganda	H_{01}	16.0016	0.0003	FIND → MIS
	H_{02}	2.8445	0.2412	
Zimbabwe	H_{01}	1.4790	0.4773	No Causality
	H_{02}	2.2607	0.3229	

Note: FIND (Financial development), MIS (Macroeconomic instability).
Null Hypothesis: H_{01}: FIND does not cause MIS, and H_{02}: MIS does not cause FIND.
Where the notation; X → Y means, variable X causes Y. values.
**Significant at 10%, **Significant at 5%, ***Significant at 1%.*
Source: Author's Computation

5.3.7 Results on Variance Decompositions of Sampled SSA Countries

Our empirical findings broadly show the role that financial sector reform play in stimulating higher level of economic performance in SSA, although its impact was mixed. Our findings established the existence of causality running from financial reform to financial development and from the former to economic performance. There were also cases of reverse and bilateral causality in some countries. In determining the magnitude and extent to which financial reform shocks influence financial sector development, and then economic performance, the VAR framework with the help of variance decomposition analysis was employed following the Cholesky Ordering: financial reforms, financial development (FIND) - proxy by credit to the private sector, gross capital formation (GCF), real GDP per capita (GDPPC), Economic misery index (MISI) and human development (HDI). The variance decomposition apportions the total fluctuations in a particular indicator to the constituent shocks or innovations in the VAR system.

We computed the variance decomposition over a ten-period horizon in an unrestricted VAR framework. This is to enable the capturing of both the short-term, medium-term and long-term responses. Most empirical studies have shown that the highest percentage error variance decomposition of macroeconomic variables often originates from their own past shocks, but are expected to decline over the forecast periods. The declining feature suggests improved transmission of policy shocks to other variables in the system as forecast period increases. Our focus would be on variance decomposition results of ratio of financial development and financial sector reforms variables. The graphical representations of the respective variance decomposition for each countries studied are presented in *Appendix 7* of this study.

Variance Decomposition Analysis: Burkina Faso

The forecast error variance of private credit explained by own variation in period one is about 65.6%, while GDPPC and MISI accounted for reasonably large proportion. The explained portion of shock to FIND by GDPPC continually stayed above 30% and appears to be more effective within the second and fourth year reaching over 40%. This may indicate that size of GDP matters in process of financial development in Burkina Faso. From the seventh to the tenth year, significant proportion of shocks to FIND is

explained by variations in financial sector reform (FINR). Also, innovations in FINR are mostly explained by the forecast error variance of financial development (FIND) and gross capital formation (GCF) over the 10-year horizon.

Variance Decomposition of FIND

Period	S.E.	GDPPCBF	GCFBF	MISIBF	HDIBF	FINDBF	FINRBF
1	1.231806	17.83695	0.034492	12.30155	4.182375	65.64463	0.000000
		(13.0303)	(4.17552)	(8.38635)	(5.92852)	(12.3748)	(0.00000)
2	1.857084	41.51649	7.242730	7.555758	1.952604	41.20272	0.529696
		(16.1783)	(9.81435)	(6.63528)	(4.37743)	(11.5638)	(3.41088)
3	2.309108	45.08474	12.74102	5.782878	1.272212	26.93037	8.188778
		(16.3918)	(13.1097)	(7.26946)	(3.66780)	(9.06385)	(5.39857)
4	2.616889	43.14476	13.15532	5.167805	1.635750	23.83344	13.06293
		(16.5282)	(14.6814)	(7.18778)	(4.28167)	(9.05101)	(7.19479)
5	2.933181	37.68863	11.34718	6.987798	2.488683	23.81830	17.66941
		(15.7464)	(14.6975)	(8.72561)	(6.35855)	(9.49437)	(7.82520)
6	3.198923	33.69677	9.597366	9.144044	3.450500	24.13696	19.97435
		(15.4830)	(14.0920)	(9.63315)	(8.38200)	(9.87014)	(8.53155)
7	3.427117	31.42918	8.407282	10.71463	4.127405	24.10548	21.21602
		(15.0899)	(13.5868)	(10.2703)	(9.97737)	(9.77918)	(8.92283)
8	3.622869	30.59102	7.753841	11.61165	4.600422	23.60595	21.83712
		(15.0879)	(13.3903)	(10.8057)	(11.2093)	(9.49093)	(9.28658)
9	3.800916	30.79518	7.386779	12.09335	4.966836	22.81659	21.94126
		(15.3219)	(13.3926)	(10.9957)	(12.2699)	(9.68117)	(9.63340)
10	3.973381	31.61936	7.161749	12.32993	5.284993	21.87328	21.73068
		(15.7353)	(13.6526)	(11.2807)	(12.7953)	(9.95659)	(10.0451)

Variance Decomposition of FINR

Period	S.E.	GDPPCBF	GCFBF	MISIBF	HDIBF	FINDBF	FINRBF
1	0.151220	0.481477	2.663373	0.332288	0.069952	26.02250	70.43041
		(5.79395)	(5.65914)	(4.72100)	(3.54253)	(10.8691)	(12.1650)
2	0.203788	0.742345	7.601164	0.206656	0.040036	28.65714	62.75265
		(7.68404)	(9.02354)	(5.77638)	(4.12284)	(11.1462)	(12.4791)
3	0.258950	0.614836	10.99309	1.148543	0.155446	29.78397	57.30412
		(7.52719)	(11.8575)	(6.74027)	(4.49511)	(11.3292)	(12.5220)
4	0.302841	0.699616	12.90135	1.800526	0.296322	28.81496	55.48723
		(8.34291)	(13.4826)	(8.44582)	(5.60029)	(11.1350)	(13.1013)
5	0.338951	0.614171	15.06677	2.338306	0.479557	28.19929	53.30191
		(8.69913)	(15.1507)	(9.78074)	(6.82447)	(10.9762)	(13.7156)
6	0.373428	0.515813	16.60940	2.563191	0.761827	27.57320	51.97657
		(9.15888)	(16.0893)	(10.7103)	(8.44682)	(10.9401)	(13.8134)
7	0.403056	0.444289	17.87480	2.782499	1.039825	27.05368	50.80490
		(9.74982)	(16.5646)	(11.4503)	(10.1554)	(10.8613)	(14.2106)
8	0.429854	0.390793	18.92972	2.978209	1.310364	26.62397	49.76694
		(10.4411)	(16.4178)	(12.0109)	(11.7917)	(10.8031)	(14.5097)
9	0.453287	0.351694	19.80704	3.149651	1.568584	26.26751	48.85553
		(10.9767)	(16.2879)	(12.1991)	(13.0342)	(10.6395)	(14.7987)
10	0.473512	0.322838	20.54112	3.304300	1.818875	25.96664	48.04623
		(11.6991)	(16.5784)	(12.2677)	(13.9540)	(10.6413)	(15.1414)

Source: Author's Computation

Variance Decomposition Analysis: Cameroun

The variance decomposition of FIND for Cameroun shows that, as expected of most macroeconomic time series data, about 84.3% of own variation is explained in the first year, while only GDPPC and HDI explained a relatively small share. Shocks to GDPPC (13.4%), GCF (30.3%) and HDI (17.9%) seem to play a prominent role in explaining forecasts error in FIND in the tenth year. Innovations in FIND explain 23.3% in the final year after the policy shock. It can aptly be seen that FINR is significantly explained by its own variation which accounts for 93.7% in the first year, and other variables share in explaining the remaining variation is minimal, even in the tenth year, except MISI (26.4%) and HDI (20.7%) which explained an increasing proportion of the forecast error variance of FINR. The contributions of GDPPC (4.4%), GCF (4.7%) and FIND (1.1%) appear to be unreasonably low.

Variance Decomposition of FIND

Period	S.E.	GDPPCCAM	GCFCAM	MISICAM	HDICAM	FINDCAM	FINRCAM
1	2.340461	0.002128	12.85022	0.070119	2.782931	84.29460	0.000000
		(5.79851)	(12.3290)	(3.87802)	(6.37074)	(12.5810)	(0.00000)
2	2.822583	1.732801	12.36309	0.557425	3.822266	80.03470	1.489713
		(6.55751)	(12.6992)	(5.25325)	(8.34387)	(14.5240)	(4.19082)
3	3.182098	3.052112	9.800089	0.884126	14.49628	70.16203	1.605359
		(7.25427)	(11.4427)	(6.67488)	(9.94095)	(13.4782)	(4.46439)
4	3.582400	3.020232	7.779388	3.070593	26.14430	55.48249	4.503003
		(7.94560)	(10.5915)	(7.64180)	(12.7468)	(12.7472)	(5.29817)
5	4.063653	3.739292	9.114745	6.442950	30.22303	43.24791	7.232081
		(8.89967)	(10.0796)	(9.11775)	(13.9183)	(11.2224)	(5.48885)
6	4.498559	6.402587	15.09410	8.051861	26.69021	35.49315	8.268089
		(10.0777)	(11.0395)	(9.80283)	(13.6601)	(10.5387)	(5.33458)
7	4.913038	9.933266	21.56065	8.489148	22.37725	29.75727	7.882419
		(11.2147)	(12.8443)	(10.4222)	(13.7437)	(9.66519)	(5.47107)
8	5.277377	12.41406	26.16808	8.512903	19.92745	25.90232	7.075186
		(11.7184)	(13.9795)	(10.5883)	(13.6107)	(9.10136)	(5.74521)
9	5.530446	13.39184	28.82159	8.667169	18.66518	23.92951	6.524703
		(11.7270)	(14.4378)	(10.9083)	(13.7591)	(8.80166)	(5.96415)
10	5.667279	13.39559	30.25916	8.880696	17.90192	23.27051	6.292127
		(11.6110)	(14.4645)	(10.9891)	(13.4130)	(8.74328)	(6.03286)

Variance Decomposition of FINR

Period	S.E.	GDPPCCAM	GCFCAM	MISICAM	HDICAM	FINDCAM	FINRCAM
1	0.137028	0.190295	1.290902	4.184188	0.058661	0.566620	93.70933
		(5.98944)	(6.71453)	(5.99147)	(2.96007)	(4.96425)	(11.9966)
2	0.210855	0.368418	2.369238	13.11013	0.463164	0.729627	82.95943
		(6.84213)	(8.60895)	(9.73535)	(5.04726)	(4.89841)	(13.4670)
3	0.262390	0.257458	3.667134	18.47047	1.828824	0.646110	75.13001
		(7.38593)	(8.00757)	(10.8438)	(7.35483)	(4.69176)	(13.2190)
4	0.311939	1.732470	5.440680	21.93554	3.664136	0.466015	66.76116
		(7.28036)	(9.32820)	(11.4188)	(9.68084)	(4.43100)	(14.2949)
5	0.357951	3.608425	5.381588	24.41783	6.476196	0.456744	59.65922
		(7.74683)	(10.1957)	(11.6198)	(11.9684)	(4.57873)	(15.4530)
6	0.396242	4.734376	5.447098	24.93221	9.616548	0.633097	54.63668

		(8.30576)	(10.7122)	(11.8690)	(13.4352)	(5.09983)	(15.8449)
7	0.429083	5.233519	5.614477	24.71441	12.71092	0.929965	50.79671
		(8.62593)	(11.1567)	(12.2430)	(14.0364)	(5.41587)	(15.4670)
8	0.457653	5.203866	5.529041	24.71477	15.57352	1.114751	47.86405
		(8.85601)	(11.2948)	(12.8331)	(14.3510)	(5.61352)	(15.0625)
9	0.483259	4.829146	5.211954	25.26482	18.21357	1.151105	45.32941
		(9.08218)	(11.4852)	(13.3526)	(14.2381)	(5.65744)	(14.7921)
10	0.506649	4.397102	4.781887	26.42900	20.27175	1.108076	43.01219
		(9.23649)	(11.4636)	(13.8014)	(14.1869)	(5.70318)	(14.5560)

Source: Author's Computation

Variance Decomposition Analysis: Cote d'Ivoire

The forecast error variance of FIND explains by own variation is only 34.2%, while shocks to MISI explains 61.4% variation in period one, suggesting the prevalence of economic uncertainties in the country. Although shocks to GDPPC accounted for significant share, staying over 10% from period 2 to 10, but was highest at 19.3% in the third year. Shocks to FINR remained above 35.7% during the forecasts period and especially reflecting the interaction between financial development and financial reform in the country. Regarding financial reforms (FINR), variations in FINR explain the biggest share (75.2%) of its own variations and other shocks explain a relatively non-significant share of the variance in financial reform variable. Financial development, GCF and HDI fails to significantly account for appreciable proportions of forecast error variance in financial reform.

Variance Decomposition of FIND

Period	S.E.	GDPPCCO	GCFCO	MISICO	HDICO	FINDCO	FINRCO
1	1.994156	0.336346	0.524697	61.44133	3.459243	34.23838	0.000000
		(4.67054)	(5.13132)	(11.4686)	(4.09568)	(10.0931)	(0.00000)
2	2.530080	15.94644	1.795589	43.41460	7.248908	29.87154	1.722926
		(14.6779)	(5.83843)	(14.3812)	(7.29182)	(10.8943)	(5.31334)
3	2.888441	19.35247	1.559741	35.08864	5.706226	22.92784	15.36509
		(15.2746)	(7.52553)	(14.1193)	(7.13851)	(8.98300)	(9.06547)
4	3.509248	16.72182	1.413793	25.31389	3.867461	16.90066	35.78237
		(14.4846)	(9.31946)	(11.7934)	(6.65989)	(8.03697)	(12.0771)
5	4.116901	14.23467	2.116696	20.24802	2.861538	14.88165	45.65743
		(13.5421)	(10.0027)	(11.1389)	(6.65170)	(8.21565)	(13.5529)
6	4.630936	13.72345	2.243479	17.85257	2.267188	14.40078	49.51253
		(13.0844)	(9.59554)	(12.4665)	(6.49676)	(8.43429)	(14.2447)
7	5.011678	14.19866	2.163125	16.89991	1.939024	14.33246	50.46683
		(12.8947)	(9.64930)	(13.2686)	(6.85275)	(8.68981)	(14.4962)
8	5.297511	14.87989	2.134411	16.86633	1.736761	14.30180	50.08081
		(12.5502)	(9.71314)	(14.1928)	(6.96757)	(8.80120)	(14.3140)
9	5.504244	15.44300	2.263525	17.15967	1.617731	14.37187	49.14421
		(12.8051)	(9.70242)	(14.2457)	(7.30883)	(9.02449)	(13.9210)
10	5.648195	15.88683	2.505052	17.49887	1.564148	14.47292	48.07218
		(12.8599)	(9.78776)	(14.6265)	(7.82417)	(9.22982)	(13.5973)

Variance Decomposition of FINR

Period	S.E.	GDPPCCO	GCFCO	MISICO	HDICO	FINDCO	FINRCO
1	0.081506	6.016472	8.867465	5.621376	1.963420	2.362749	75.16852
		(8.83295)	(8.82692)	(7.40286)	(5.09410)	(4.75857)	(13.4816)
2	0.122236	9.742458	3.956584	3.812231	4.081306	1.285024	77.12240
		(12.2643)	(6.97889)	(7.54150)	(8.73637)	(4.31475)	(14.1949)
3	0.157756	12.11474	3.203930	5.259310	3.261936	2.254480	73.90561
		(13.8075)	(8.28393)	(9.93817)	(7.68861)	(6.05185)	(15.3663)
4	0.191368	13.04939	3.459391	6.578831	3.106482	4.408948	69.39696
		(14.2496)	(9.28447)	(11.6697)	(7.74797)	(6.97862)	(16.0041)
5	0.219284	13.62462	3.861437	8.268314	2.951308	5.707900	65.58642
		(14.0376)	(9.39645)	(13.4023)	(7.42731)	(7.85647)	(16.5870)
6	0.238925	14.46514	4.373130	9.651885	2.796829	6.374192	62.33882
		(13.9601)	(9.52317)	(14.6600)	(7.54078)	(8.33723)	(16.7062)
7	0.252168	15.53395	4.844395	10.60525	2.641312	6.725269	59.64983
		(13.9357)	(9.57552)	(15.1015)	(7.52516)	(8.66916)	(16.5727)
8	0.260992	16.55396	5.298362	11.27645	2.519145	6.872668	57.47942
		(14.0478)	(10.4343)	(15.1104)	(7.84458)	(8.85354)	(16.3033)
9	0.266764	17.37744	5.762333	11.74255	2.425201	6.894171	55.79830
		(13.9501)	(11.2907)	(14.9316)	(8.15653)	(9.05204)	(15.9826)
10	0.270402	17.99294	6.207945	12.00798	2.360946	6.856956	54.57323
		(13.5879)	(12.1944)	(14.9560)	(8.59172)	(9.20316)	(15.6406)

Source: Author's Computation

Variance Decomposition Analysis: Ethiopia

A shock to FIND is mainly explained by its own innovations, about 76.1% in first period, and was only HDI and MISI that accounted for a relatively significant portion in the period. GDPPC accounted for an increasing proportion of forecast error variance in FIND, reaching 32.4% in the tenth year. Regarding FINR, shocks to GDPPC and financial reforms itself explain 14.9% and 67.2% in the first period, respectively. Innovations in other variables explain a non-significant share of the variance in financial reform during the initial period, including FIND. In Ethiopia, state ownership of banks is still relatively high, as the country continues to postpone full-fledged bank privatization drive. This could be the reason why financial development does not significantly explain the forecast error variance of FINR. In the tenth year, only GDPPC (41.4%), GCF (11.3%) and HDI (19.7%) accounted for relatively significant variation in FINR.

Variance Decomposition of FIND

Period	S.E.	GDPPCET	GCFET	MISIET	HDIET	FINDET	FINRET

1	1.908568	1.878455	0.820888	13.49018	7.625848	76.18463	0.000000
		(8.30338)	(4.61540)	(10.4712)	(7.94131)	(13.3452)	(0.00000)
2	2.465702	2.094139	0.552828	11.54323	9.233324	70.79845	5.778031
		(7.56491)	(7.33103)	(10.2164)	(8.00462)	(12.5209)	(5.74959)
3	2.646643	6.772767	1.045088	10.24612	12.03108	62.50274	7.402207
		(10.1149)	(8.96518)	(10.4413)	(8.91982)	(12.8539)	(5.28664)
4	2.725782	6.712898	1.078183	10.60418	11.35301	61.92952	8.322212
		(9.69486)	(10.1598)	(10.9326)	(8.38936)	(13.0670)	(5.65157)
5	2.907293	7.823947	1.151126	11.16540	10.97100	59.37901	9.509510
		(9.57074)	(10.9328)	(11.5346)	(7.99545)	(12.9564)	(6.02475)
6	3.240558	14.45977	3.596951	10.95798	11.22644	49.36871	10.39015
		(10.7299)	(11.0588)	(11.2165)	(7.95318)	(11.5659)	(5.71557)
7	3.708045	22.51284	6.821400	10.04963	10.81525	37.70977	12.09111
		(10.9008)	(10.9885)	(11.0391)	(7.91601)	(11.0178)	(5.75685)
8	4.163035	27.65101	9.985545	8.804321	9.779890	30.20465	13.57458
		(11.2009)	(11.6683)	(11.1964)	(8.40193)	(10.3578)	(6.22894)
9	4.561635	30.66805	12.26671	7.981954	8.782448	25.54865	14.75219
		(11.9313)	(11.9814)	(11.1384)	(8.75387)	(10.5738)	(6.59469)
10	4.881564	32.45066	14.12349	7.552047	7.886960	22.50134	15.48551
		(12.6012)	(13.4209)	(11.3532)	(8.95470)	(10.6353)	(6.88668)

Variance Decomposition of FINR

Period	S.E.	GDPPCET	GCFET	MISIET	HDIET	FINDET	FINRET
1	0.069372	14.98649	7.866189	2.758442	3.469965	3.713534	67.20538
		(11.5919)	(9.42216)	(5.20188)	(3.95736)	(5.70390)	(13.1493)
2	0.095508	14.39654	6.597023	2.492297	12.48934	2.077634	61.94717
		(12.2279)	(8.61761)	(6.70413)	(10.3135)	(4.95432)	(13.5352)
3	0.131190	19.77423	6.732163	2.340079	18.39996	1.765685	50.98788
		(14.9112)	(9.07757)	(7.70030)	(10.9560)	(4.83587)	(13.2807)
4	0.170933	26.57001	6.708424	1.388232	21.63970	1.823818	41.86982
		(15.5933)	(9.65911)	(8.52624)	(12.7842)	(5.99377)	(12.9092)
5	0.215361	32.25161	7.169052	0.934227	23.73398	1.334686	34.57645
		(16.4217)	(10.4246)	(9.12740)	(13.6481)	(6.96509)	(12.0651)
6	0.256907	35.72008	7.880537	0.739086	23.55646	0.938161	31.16567
		(16.8112)	(12.5970)	(9.88438)	(14.3547)	(7.63418)	(11.8993)
7	0.293483	37.91824	8.938701	0.595778	22.71595	0.753158	29.07817
		(17.0863)	(13.9306)	(10.6725)	(14.5218)	(8.42007)	(11.6098)
8	0.325499	39.43765	9.717201	0.521827	21.77307	0.674228	27.87603
		(17.4670)	(16.0954)	(11.2666)	(14.6924)	(8.89547)	(11.6375)
9	0.352094	40.51817	10.53004	0.487269	20.77760	0.621914	27.06500
		(17.5318)	(16.8979)	(11.8692)	(14.6945)	(8.97128)	(11.3737)
10	0.374992	41.41602	11.35179	0.516575	19.77211	0.575827	26.36768
		(17.5677)	(17.9893)	(12.4796)	(14.7995)	(9.01228)	(11.3530)

Source: Author's Computation

Variance Decomposition Analysis: Ghana

The variance decomposition of FIND shows that 80% of the forecast error variance in FIND was explained by itself and HDI, about 11.2% in the first year. The proportion of shocks explained by GCF grew to 41.5% in the eighth year, representing the biggest share, albeit declined marginally to 39.2% in the tenth year. Other shocks that explained significant share of variance in FIND after the tenth year include GCF (39.2%), GDPPC (15.9%) and own forecast errors (21.8%). As expected, shocks to FINR accounted for

70.6% of its own innovation in the first year, but declined precipitously to 7.9% in the tenth year. Innovations in GDPPC (38.6%), GCF (24.9%) and HDI (23.1%) account for significant portion in FINR shock, with minimal contributions coming from FIND in the tenth year. GCF explained about 48.1% in the 5th year before declining to 24.9% in the tenth year, suggesting the sensitivity of investments and economic activities to financial reforms.

Variance Decomposition of FIND

Period	S.E.	GDPPCGHA	GCFGHA	MISIGHA	HDIGHA	FINDGHA	FINRGHA
1	1.221117	2.199628	6.020436	11.23384	0.537726	80.00837	0.000000
		(7.08555)	(8.92122)	(9.10972)	(4.40065)	(12.8389)	(0.00000)
2	1.545273	1.531723	3.868056	7.900433	19.77843	65.28517	1.636188
		(6.48666)	(7.17130)	(8.03031)	(12.3086)	(13.7130)	(4.39215)
3	1.687913	5.586694	4.313813	6.761751	16.60395	58.15780	8.575990
		(8.51496)	(7.17663)	(7.95836)	(10.1821)	(13.2760)	(7.41127)
4	1.880294	4.526770	12.31490	5.551661	13.40985	52.98457	11.21224
		(8.47917)	(9.88302)	(8.15587)	(9.05400)	(11.6920)	(6.63932)
5	2.045849	4.337330	19.48723	6.008091	11.55627	47.16772	11.44336
		(8.84285)	(13.4904)	(8.53849)	(8.99637)	(11.1538)	(5.90970)
6	2.229998	3.693010	28.85690	5.933873	10.00541	40.54981	10.96100
		(10.0747)	(16.2267)	(8.49561)	(8.93518)	(11.1339)	(7.10222)
7	2.424060	4.010101	37.51692	5.187136	9.239039	34.59545	9.451353
		(11.4568)	(17.8499)	(8.26215)	(8.74604)	(10.7462)	(6.28671)
8	2.623034	6.731130	41.48974	4.433261	9.695053	29.54632	8.104499
		(12.6463)	(17.9937)	(8.27791)	(8.55182)	(10.3824)	(6.49221)
9	2.844800	11.28564	41.36576	3.913202	11.36610	25.14523	6.924063
		(14.1546)	(18.0453)	(8.12345)	(8.30777)	(10.3333)	(6.34954)
10	3.055088	15.94787	39.23796	3.589597	13.36512	21.82220	6.037245
		(15.6500)	(17.8792)	(8.31052)	(8.45157)	(10.2446)	(6.57093)

Variance Decomposition of FINR

Period	S.E.	GDPPCGHA	GCFGHA	MISIGHA	HDIGHA	FINDGHA	FINRGHA
1	0.126536	0.010913	2.940364	0.631177	19.08387	6.763466	70.57021
		(5.28325)	(7.67577)	(3.90322)	(12.2334)	(5.46288)	(13.6702)
2	0.181466	0.005483	26.83316	4.960860	11.44711	12.10628	44.64711
		(6.71727)	(14.3058)	(7.28391)	(9.83446)	(6.94033)	(13.5158)
3	0.212594	0.444840	37.54757	9.797264	8.902003	8.981530	34.32680
		(8.75601)	(15.7343)	(8.57621)	(8.20386)	(5.87445)	(11.8613)
4	0.249695	3.147005	44.83412	7.467801	11.68644	6.706853	26.15778
		(11.0288)	(16.3853)	(7.83615)	(7.86026)	(5.25650)	(9.97136)
5	0.285292	7.866373	48.11439	5.725030	12.96653	5.256086	20.07159
		(13.0019)	(17.5562)	(8.18540)	(8.71175)	(5.32781)	(9.16330)
6	0.323539	15.90675	44.03114	4.543614	15.53844	4.358752	15.62131
		(15.1033)	(18.1555)	(7.48631)	(9.86199)	(5.57659)	(8.00969)
7	0.363631	23.86100	37.61863	4.007839	18.45439	3.690218	12.36793
		(17.0488)	(18.3850)	(7.18256)	(10.2589)	(5.86084)	(7.31194)
8	0.399093	30.14987	32.18534	3.672188	20.58383	3.133828	10.27495
		(17.7886)	(18.0898)	(7.41945)	(10.2617)	(6.14071)	(7.21016)
9	0.429712	34.89859	28.04974	3.331387	22.11418	2.703689	8.902419
		(17.6317)	(17.7382)	(7.80146)	(10.2098)	(6.45119)	(7.24629)
10	0.456580	38.56692	24.96406	3.003540	23.08279	2.424457	7.958232
		(17.7067)	(17.4348)	(8.31672)	(10.3511)	(7.11749)	(7.13403)

Variance Decomposition Analysis: Kenya

The variance decomposition of FIND for Kenya shows that about 43.6% of its own forecast error variance is explained by itself in the first year. Other shocks explain a non-significant share of the variance of FIND, except GCF that explained about 34.9% innovations in financial development in the first year and continues to stay above 22.6% throughout the 10-year forecast horizon. In the tenth year, a significantly larger variations in FIND is explained by own changes, about 11.7%, and GDP (32.8%). Shocks to FINR explain about 86.2% of its own growth in the first year, while the remaining variables GDPPC, GCF, MISI, HDI and FIND individually explain a very small share. Innovations in financial reforms explained only 23.3% by itself in the tenth year, with increasing proportion of explained share of forecast errors in FINR coming from GCF (39.5%), GDPPC (16.4%) and FIND (15.4%).

Variance Decomposition of FIND

Period	S.E.	GDPPCKEN	GCFKEN	MISIKEN	HDIKEN	FINDKEN	FINRKEN
1	2.321232	4.812452	34.99126	6.628474	9.977924	43.58989	0.000000
		(9.33047)	(13.7192)	(7.18909)	(7.29699)	(11.5704)	(0.00000)
2	2.653682	13.53482	32.59897	8.274289	11.90123	33.36201	0.328688
		(12.1061)	(14.1164)	(7.52215)	(8.84196)	(8.81640)	(4.08386)
3	2.937058	20.61501	32.76007	6.956844	9.776611	29.14823	0.743232
		(12.9970)	(14.3516)	(7.61936)	(8.32036)	(8.74851)	(5.46724)
4	3.472384	28.35312	31.49407	4.991122	6.999057	25.13115	3.031487
		(14.1593)	(14.9605)	(7.34152)	(8.03874)	(8.21978)	(7.01516)
5	4.155229	33.46713	30.12193	5.072857	4.928324	21.00212	5.407640
		(15.2864)	(15.6342)	(8.88649)	(7.87436)	(8.11604)	(8.04180)
6	4.690677	35.57491	28.23722	5.675806	3.983037	17.44345	9.085569
		(15.6366)	(15.8392)	(10.1051)	(8.13351)	(8.38500)	(9.39529)
7	5.130207	35.62548	26.55747	5.909300	3.444361	15.64598	12.81741
		(15.8405)	(16.2124)	(11.4047)	(8.05017)	(8.78970)	(10.2594)
8	5.518653	35.09869	24.66793	6.833377	3.003036	14.06806	16.32891
		(15.8790)	(16.2100)	(12.3400)	(8.39676)	(8.87322)	(10.9867)
9	5.832564	34.11919	22.69518	8.130891	2.758902	12.63995	19.65589
		(15.9607)	(15.8416)	(13.3244)	(9.06669)	(9.16688)	(11.3372)
10	6.072545	32.82625	21.03045	8.918476	2.666610	11.66448	22.89374
		(15.9039)	(15.4366)	(13.5299)	(9.34485)	(9.09783)	(11.6784)

Variance Decomposition of FINR

Period	S.E.	GDPPCKEN	GCFKEN	MISIKEN	HDIKEN	FINDKEN	FINRKEN
1	0.117176	8.650596	0.061004	2.984495	0.102728	1.999997	86.20118
		(10.0455)	(4.65736)	(6.05517)	(3.62414)	(5.53857)	(13.1199)
2	0.177549	3.975134	6.044946	16.89850	0.444847	1.963468	70.67311
		(6.88138)	(8.28714)	(12.0237)	(5.68262)	(5.67350)	(13.8741)
3	0.240261	2.627703	14.18953	13.98274	0.269643	8.456632	60.47375
		(7.78637)	(11.8116)	(11.3172)	(5.51450)	(8.44084)	(14.6585)
4	0.283688	3.753268	20.18907	11.38953	0.270459	9.931267	54.46640
		(10.3697)	(14.3711)	(10.5116)	(6.79482)	(9.46334)	(15.4842)
5	0.324891	5.272955	25.16005	9.514830	0.449694	11.59688	48.00559
		(11.7418)	(15.4098)	(10.0482)	(7.82482)	(10.2945)	(15.7340)
6	0.365949	7.368264	29.57171	7.901612	0.546128	13.30432	41.30797
		(13.0399)	(16.2292)	(9.18243)	(8.24427)	(10.2454)	(15.8543)
7	0.405740	9.848304	33.25037	6.467575	0.631736	14.37857	35.42344

		(13.9965)	(16.7030)	(9.12473)	(8.83209)	(10.5667)	(15.9369)
8	0.442504	12.24719	36.03510	5.437560	0.831421	14.85392	30.59481
		(14.4026)	(17.4226)	(9.28371)	(8.82856)	(10.3778)	(15.8417)
9	0.477604	14.40171	38.08501	4.682847	1.047503	15.22745	26.55548
		(14.5938)	(17.7041)	(9.43121)	(8.66615)	(10.8920)	(15.6684)
10	0.510680	16.38294	39.52854	4.186460	1.236118	15.38178	23.28416
		(15.2146)	(17.9942)	(9.89673)	(8.31611)	(10.4576)	(15.3908)

Variance Decomposition Analysis: Madagascar

The forecast error variance of FIND explained by own variation is only 87.9% in period one. Shocks to other variables explained a very small proportion. Share explained by MISI picked up in the second year, accounting for 31%, albeit declined till the 10^{th} year. HDI and FINR explained an increasing proportion in forecast error variance in FIND throughout the ten-year period. Regarding financial sector reform, only shocks to MISI (26.2%) and financial reforms itself (61.9%) explain the larger share. HDI explains increasing share in forecast error variance in FIND in the forecast horizon. Shocks to FIND, GCF and GDPPC explain negligible variation in FINR in the country. The result of the decomposition of variance of Madagascar gives credence to IMF (2006) comment that poor loan quality and episodes of political and macroeconomic instability dampened the credit supply and demand of the country's financial system.

Variance Decomposition of FIND

Period	S.E.	GDPPCMAD	GCFMAD	MISIMAD	HDIMAD	FINDMAD	FINRMAD
1	0.925506	1.526340	0.162164	9.421832	0.920409	87.96926	0.000000
		(6.61906)	(6.25781)	(8.28488)	(3.53583)	(10.5818)	(0.00000)
2	1.568202	3.560521	2.094180	31.00741	0.506214	62.83028	0.001395
		(9.75013)	(7.23698)	(14.6420)	(4.27286)	(14.0592)	(1.82351)
3	1.884306	4.598157	4.697732	37.22821	1.633471	51.82283	0.019594
		(11.2945)	(9.05047)	(17.0908)	(6.49009)	(14.9140)	(3.47635)
4	2.009197	5.756473	6.146934	34.69529	5.006848	46.04424	2.350219
		(11.8540)	(9.34775)	(16.2346)	(8.38149)	(13.9989)	(6.14124)
5	2.172761	6.096845	6.305039	29.72267	9.954483	39.46421	8.456748
		(10.7122)	(8.86846)	(14.7633)	(10.0522)	(13.7092)	(8.31006)
6	2.346985	6.367800	5.872475	25.62855	14.49762	33.86008	13.77348
		(10.2356)	(8.62432)	(14.0664)	(11.6338)	(13.5281)	(9.62840)
7	2.487826	7.211426	5.603307	22.81009	18.09314	30.19756	16.08447
		(10.2749)	(8.64267)	(13.3623)	(12.6391)	(13.3057)	(10.0871)
8	2.605704	8.534022	5.564111	20.87236	20.61376	27.77320	16.64255
		(10.3932)	(8.82234)	(12.9259)	(13.1608)	(12.8480)	(10.2135)
9	2.708936	9.829909	5.698937	19.36912	22.43620	25.89509	16.77075
		(10.8333)	(9.06267)	(12.6218)	(13.3265)	(12.4722)	(10.1470)
10	2.800834	10.76330	5.875104	18.13017	23.93214	24.29894	17.00034
		(11.4167)	(9.34965)	(12.4632)	(13.3370)	(12.4728)	(10.0673)

Variance Decomposition of FINR

Period	S.E.	GDPPCMAD	GCFMAD	MISIMAD	HDIMAD	FINDMAD	FINRMAD

1	0.170345	3.038277	0.001326	26.27117	3.673465	5.040262	61.97550
		(9.06665)	(3.89878)	(12.7783)	(6.49544)	(4.76989)	(12.9934)
2	0.226766	1.766791	0.198219	15.78659	10.87348	3.875077	67.49984
		(7.68516)	(5.10601)	(9.80964)	(11.4204)	(5.48665)	(13.4814)
3	0.258565	1.544284	0.816037	13.89052	15.52182	3.262420	64.96492
		(8.00365)	(5.61402)	(8.39997)	(12.2252)	(6.72553)	(13.7422)
4	0.279270	2.793430	0.700613	13.76375	18.40993	3.648725	60.68355
		(9.04453)	(5.47991)	(8.65539)	(12.3695)	(7.63508)	(13.5136)
5	0.296344	4.401615	0.651377	12.33666	20.20189	3.423805	58.98466
		(10.0164)	(5.30329)	(8.64355)	(12.1183)	(8.32420)	(13.0140)
6	0.315157	5.027456	0.601905	10.95762	21.68733	3.031376	58.69431
		(10.1482)	(5.61312)	(8.80439)	(12.4766)	(8.89046)	(12.8216)
7	0.333968	5.129538	0.537262	9.786903	23.04625	2.721487	58.77856
		(10.1172)	(6.11942)	(8.62088)	(12.9597)	(9.40853)	(12.9567)
8	0.349994	5.269382	0.489756	8.914528	24.36730	2.478030	58.48101
		(10.2020)	(6.88580)	(8.44144)	(13.3160)	(9.77605)	(13.2303)
9	0.363350	5.599859	0.460136	8.288551	25.48356	2.310168	57.85772
		(10.4517)	(7.27809)	(8.61036)	(13.5444)	(10.0896)	(13.4520)
10	0.375060	6.007430	0.450189	7.784421	26.37767	2.180884	57.19941
		(10.7265)	(7.57752)	(8.84559)	(13.7255)	(10.5728)	(13.5332)

Source: Author's Computation

Variance Decomposition Analysis: Mozambique

The variance decomposition of FIND shows that 79.5% of the forecast error variance is explained by itself and HDI (15.1%) in the first year. Shocks to GDPPC and GCF both jumped to 33.6% and 15.6%, respectively in the fourth year before they decline to 21.4% and 8.9% in the 10^{th} year, implying that they play a prominent role in explaining short-term variations in FIND. In the tenth year, shocks in FIND explain 21% of its own variations after the shock. It can be seen that shocks to FINR is significantly explained by its own variation, accounting for 92.2% in the first year, and proportions explained by other variables is minimal. Shocks to other variables that explained significant share of variance in FINR in the tenth year include GDPPC (54.6%) and GCF (18.4%), and own innovations in FINR is 21.2%. The portion explained by financial development is very low in the tenth-year.

Variance Decomposition of FIND

Period	S.E.	GDPPCMOZ	GCFMOZ	MISIMOZ	HDIMOZ	FINDMOZ	FINRMOZ
1	2.316146	1.950635	2.159006	1.325548	15.08769	79.47712	0.000000
		(6.08064)	(6.30595)	(3.95045)	(10.5558)	(12.6026)	(0.00000)
2	3.365376	17.97501	15.61133	1.584670	14.01264	45.62422	5.192130
		(13.2530)	(12.6208)	(4.96301)	(9.69145)	(10.5975)	(4.58983)
3	4.138576	30.73616	11.66354	8.314267	10.75149	30.55991	7.974632
		(15.4488)	(9.66515)	(8.07178)	(10.1361)	(7.89651)	(5.30398)
4	4.599084	33.58046	15.63316	7.487145	9.436846	27.38987	6.472519
		(16.7004)	(10.6853)	(7.37021)	(10.0776)	(8.54933)	(4.51954)
5	4.982981	32.03632	13.31718	6.574096	12.91913	27.90962	7.243657
		(16.9556)	(10.5213)	(6.90794)	(11.3208)	(9.18969)	(5.00931)
6	5.291265	28.89128	11.87095	5.850597	15.47458	27.47948	10.43311
		(16.4949)	(11.0136)	(6.77402)	(11.8240)	(9.17102)	(6.94118)

7	5.523195	26.59547	11.12573	5.406932	15.86545	25.72113	15.28530
		(15.9529)	(11.8556)	(6.57827)	(12.0264)	(8.83775)	(8.71682)
8	5.742785	24.63855	10.33235	5.037454	15.05550	23.81428	21.12186
		(16.2480)	(12.6117)	(6.77924)	(11.4803)	(8.48989)	(10.3108)
9	5.975991	22.88235	9.591371	4.990475	13.92691	22.07750	26.53139
		(16.9992)	(13.8397)	(6.63618)	(10.9939)	(8.11251)	(11.7537)
10	6.188032	21.38047	8.959202	5.231122	13.04446	21.03232	30.35243
		(17.6076)	(14.9218)	(6.49319)	(10.7094)	(7.84165)	(12.5743)

Variance Decomposition of FINR

Period	S.E.	GDPPCMOZ	GCFMOZ	MISIMOZ	HDIMOZ	FINDMOZ	FINRMOZ
1	0.117802	1.146278	1.916115	0.222566	2.680418	1.827387	92.20724
		(5.37664)	(5.68281)	(4.27889)	(5.96038)	(4.06768)	(9.73366)
2	0.211764	0.386805	4.657473	2.084921	6.910015	1.404093	84.55669
		(5.75233)	(10.7715)	(7.07926)	(9.20312)	(3.83431)	(13.6455)
3	0.297589	3.842358	6.656232	3.894946	5.277136	0.714806	79.61452
		(8.07539)	(12.9570)	(8.33825)	(9.10606)	(3.44152)	(15.7697)
4	0.382918	12.45721	9.087094	4.109059	3.801628	0.490232	70.05477
		(12.6510)	(15.4186)	(8.28304)	(9.31475)	(3.21084)	(17.4819)
5	0.476869	22.63667	11.89051	4.391496	2.623116	0.337518	58.12069
		(16.1670)	(17.1525)	(8.50179)	(9.44176)	(3.32157)	(18.3521)
6	0.580429	33.04624	13.94209	4.013652	1.947033	0.228537	46.82244
		(18.9885)	(17.1564)	(8.48493)	(9.77650)	(3.67796)	(18.3546)
7	0.697066	41.36582	16.21187	3.406646	1.606021	0.241162	37.16849
		(20.7994)	(17.3123)	(8.14677)	(10.1708)	(4.23666)	(18.2716)
8	0.824483	47.65683	17.67235	2.759528	1.612048	0.467398	29.83184
		(21.9273)	(17.1426)	(7.46530)	(10.6016)	(4.78409)	(18.3768)
9	0.958748	51.90452	18.38873	2.202054	1.930634	0.927361	24.64671
		(22.5936)	(16.9833)	(6.71003)	(11.0619)	(5.33806)	(18.4334)
10	1.094610	54.58832	18.40250	1.764786	2.469981	1.528242	21.24616
		(22.9602)	(16.9173)	(6.22127)	(11.5073)	(5.81890)	(18.4858)

Source: Author's Computation

Variance Decomposition Analysis: Nigeria

In the variance decomposition of the baseline VAR model, the forecast error of FINR ten years ahead is mainly explained by own variation, being above 80% till the 5th year when other variables explained increasing proportion of variations in financial reform. In the tenth year, FINR explained 58.1%, while accounted share is 11.6% and 24.9% for GDPPC and human development, respectively. Meanwhile, the variance decomposition of FIND shows that a large, but marginally declining proportion of the forecast error variance is explained by own innovations. MISI explains the highest proportion (19.3%) in the third year; GCF (22.9%) and HDI (12.4%) both in the fourth year, respectively. GDPPC explained portion is largest in the sixth year before declining to 10.3%, 15.8%, 10.8% and 22.8%, respectively in the tenth year. This may indicate that influence of FIND on broad-based macroeconomic indicators in the economy may be a short-term phenomenon. The result may suggests that past values of FINR seem to be the best predictor of financial sector reform, as compared to GDP, GCF, MISI and HDI.

Variance Decomposition of FIND

Period	S.E.	GDPPC	GCF	MISI	HDI	FIND	FINR
1	3.471790	0.289197	25.88930	17.69167	1.154194	54.97565	0.000000
		(5.51479)	(14.2717)	(11.2277)	(4.04000)	(15.5856)	(0.00000)
2	3.973825	0.676161	23.11407	19.07777	1.026551	55.63348	0.471970
		(7.98220)	(12.9588)	(12.5834)	(5.77045)	(16.0072)	(4.23207)
3	4.306973	0.985189	22.76534	19.26151	5.212371	48.67311	3.102485
		(8.66069)	(11.6841)	(12.0230)	(8.60937)	(13.2290)	(5.42542)
4	4.976419	5.862127	22.98207	14.81847	12.43729	40.66691	3.233125
		(8.46769)	(11.6838)	(9.76444)	(10.5408)	(11.8127)	(4.63925)
5	5.669628	19.47019	18.23873	13.18488	12.37304	31.42099	5.312177
		(11.4418)	(10.6878)	(9.29488)	(11.4620)	(10.8085)	(4.85107)
6	6.156659	24.97397	16.17683	11.97102	10.50168	27.63001	8.746484
		(11.6704)	(10.1038)	(9.16384)	(11.5446)	(10.2179)	(5.66992)
7	6.400627	24.81954	16.09840	11.10836	10.29818	26.85539	10.82013
		(11.3898)	(10.1100)	(8.99627)	(11.7988)	(9.99293)	(6.72370)
8	6.498243	24.13362	15.67726	10.85029	10.71305	26.45521	12.17058
		(11.2073)	(9.90525)	(8.79717)	(12.3255)	(9.88241)	(7.06337)
9	6.584450	23.52825	15.63579	10.65679	10.83357	25.78548	13.56012
		(11.3279)	(10.0019)	(8.75759)	(12.9605)	(9.68562)	(7.26942)
10	6.693336	22.77560	15.84340	10.32416	10.81080	24.95342	15.29261
		(11.4238)	(10.0596)	(8.62847)	(13.4049)	(9.52941)	(7.86409)

Variance Decomposition of FINR:

Period	S.E.	GDPPC	GCF	MISI	HDI	FIND	FINR
1	0.162423	0.264278	0.007072	0.142706	2.093816	0.327972	97.16416
		(5.82198)	(5.23617)	(4.48445)	(5.70185)	(4.12627)	(9.69519)
2	0.201645	0.174779	0.042275	1.258562	2.067195	0.444040	96.01315
		(6.70547)	(5.65959)	(6.79632)	(6.49464)	(4.48233)	(11.6541)
3	0.231338	1.890626	0.113605	1.086187	2.488734	1.405918	93.01493
		(7.94866)	(6.78473)	(7.10673)	(9.42150)	(5.42608)	(13.1188)
4	0.269515	1.417051	0.809759	0.883827	5.834919	1.628831	89.42561
		(8.13379)	(8.45703)	(7.59076)	(13.2290)	(5.62380)	(14.8708)
5	0.306877	2.912161	1.762412	0.790066	10.09172	1.408378	83.03527
		(9.44642)	(8.96721)	(8.09258)	(15.5979)	(5.40443)	(16.6277)
6	0.342330	4.806557	2.538793	0.751063	14.52686	1.226418	76.15031
		(10.8790)	(9.07683)	(8.81789)	(17.3636)	(5.18652)	(17.5289)
7	0.378527	6.747293	3.036410	0.765990	18.35402	1.084869	70.01142
		(12.3397)	(9.24056)	(9.49169)	(18.3010)	(5.03492)	(17.6859)
8	0.413954	8.727961	3.345513	0.791459	21.23583	0.963229	64.93600
		(13.4646)	(9.39907)	(10.3698)	(18.9518)	(4.96451)	(17.7745)
9	0.447011	10.37002	3.578972	0.813212	23.35828	0.867139	61.01238
		(14.7131)	(9.56942)	(10.8013)	(19.5318)	(4.89483)	(17.7330)
10	0.477931	11.59055	3.779190	0.830684	24.90688	0.792811	58.09988
		(15.7686)	(9.76517)	(11.3294)	(20.1882)	(4.90872)	(17.7877)

Source: Author's Computation

Variance Decomposition Analysis: Senegal

The forecast error variance of FIND explained by own variation is only 18.9% in period one, while shocks to MISI and GCF accounted for about 61.4% and 17.0%, respectively. This shows that strategies aimed at enhancing economic stability and stimulating capital

formation process would directly deepen the financial sector in Senegal. On the other hand, shocks to HDI, MISI and GCF accounted for the most variations in FINR, with portion explained by GDPPC and FIND relatively small in the 10th year. The results shows that shocks to FIND is adequately been accounted for by other performance indicators over the forecast periods. This implies improved transmission and interactions among broad macroeconomic and monetary variables in the system.

Variance Decomposition of FIND

Period	S.E.	GDPPCSE	GCFSE	MISISE	HDISE	FINDSE	FINRSE
1	1.951809	0.130260	17.00827	61.40688	2.509194	18.94540	0.000000
		(5.45727)	(12.6863)	(12.3835)	(3.68349)	(6.40582)	(0.00000)
2	2.757562	9.958311	21.34582	53.62949	3.705657	10.24256	1.118161
		(9.55767)	(14.3281)	(14.4655)	(6.55666)	(4.08537)	(3.33934)
3	3.067749	21.49323	19.45276	45.11461	3.751168	9.275887	0.912348
		(12.7825)	(13.1364)	(14.3624)	(7.73252)	(4.03731)	(4.52483)
4	3.383588	29.12869	17.49306	37.55243	6.120290	8.943227	0.762309
		(13.1858)	(11.8079)	(13.3946)	(9.00364)	(4.24541)	(4.69193)
5	3.821200	34.29350	17.77348	29.44394	9.876269	7.704930	0.907876
		(13.5965)	(11.3603)	(12.8280)	(10.0272)	(4.13941)	(4.08774)
6	4.326251	37.08449	19.02648	23.45541	12.82285	6.718575	0.892194
		(13.9860)	(11.7264)	(12.5012)	(10.5801)	(4.02629)	(4.05542)
7	4.840635	37.20232	21.07746	19.36749	15.27119	6.366165	0.715373
		(14.9115)	(12.0789)	(12.4066)	(11.1099)	(4.19486)	(4.54198)
8	5.283066	36.88283	22.11149	16.60110	17.34880	6.364615	0.691162
		(15.5895)	(12.8757)	(11.6924)	(11.4912)	(4.41565)	(4.89584)
9	5.609512	37.05689	21.88629	14.90086	18.78841	6.532281	0.835267
		(15.7621)	(13.1914)	(11.2868)	(11.9120)	(4.62470)	(5.21644)
10	5.835438	37.35342	21.25317	13.84844	19.58348	6.761098	1.200393
		(15.6388)	(13.3296)	(10.8774)	(12.0909)	(4.71624)	(5.30604)

Variance Decomposition of FINR

Period	S.E.	GDPPCSE	GCFSE	MISISE	HDISE	FINDSE	FINRSE
1	0.157164	0.421350	0.176698	1.264734	4.442105	0.211232	93.48388
		(4.73904)	(3.69251)	(4.72012)	(7.65553)	(4.22349)	(10.3696)
2	0.245237	0.815425	7.630868	1.518541	7.392582	0.141633	82.50095
		(5.77116)	(8.27920)	(6.49488)	(9.74171)	(3.98918)	(12.3288)
3	0.310083	0.698864	21.18257	0.974714	17.35671	1.099910	58.68723
		(7.42558)	(12.8493)	(7.55997)	(11.0951)	(3.49310)	(14.5643)
4	0.363051	1.205957	25.10131	1.532213	23.92999	2.794676	45.43585
		(8.76484)	(14.8789)	(9.60927)	(12.0646)	(3.65725)	(14.6508)
5	0.397121	2.287769	21.91585	3.268576	28.67850	4.588489	39.26083
		(9.79814)	(14.1810)	(11.6947)	(12.4921)	(4.14710)	(13.9931)
6	0.421825	3.377310	19.42852	5.402519	30.67940	6.125328	34.98693
		(10.1233)	(13.3085)	(12.8082)	(12.5786)	(4.27645)	(12.9037)
7	0.442503	3.975708	17.71879	7.883171	31.41159	7.217072	31.79367
		(9.90548)	(12.5617)	(13.3745)	(13.0835)	(4.32307)	(11.8215)
8	0.458632	4.529223	16.72098	10.06188	31.44512	7.639516	29.60328
		(10.0330)	(12.2525)	(13.7203)	(13.4781)	(4.45815)	(11.1874)
9	0.469832	5.121060	16.17177	11.33782	31.33375	7.774483	28.26112
		(10.4810)	(12.3972)	(13.6360)	(13.7623)	(4.60422)	(10.7753)
10	0.477431	5.697371	15.68370	11.93246	31.38799	7.835822	27.46266
		(10.8697)	(12.6010)	(13.4637)	(13.9153)	(4.75852)	(10.4275)

Source: Author's Computation

Variance Decomposition Analysis: South Africa

The variance decomposition of FIND shows that in the first year, as expected, own shocks explains about 78.4% of its forecast error variance, and GDPPC accounted for 18.3%. In the 10th year, innovations in FIND declined to 33.3%. It can be seen that macroeconomic indicators like GDPPC and HDI explains prominent shocks in FIND, with GCF rising remarkably from 0.75% marginal contribution in the 1st year to 31.5% after 10 years. Shocks to FINR explained about 43.2% of its own growth in the first year, while the remaining variables, such as GCF, HDI and GDPPC explained about 26.9%, 20.1% and 5.4% variations, respectively. Innovations in FINR explained only 9.6% by itself in the tenth year, with increasing variations in FINR being accounted for by GCF (35.9%), GDPPC (20.3%), HDI (20.2%), CPS (6.9%) and MISI (6.8%). This outcome may reflect the presence of a dynamic interrelationship between financial variables and real macroeconomic variables in South Africa and may reflect improved transmission of economic interactions in the country.

Variance Decomposition of FIND

Period	S.E.	GDPPC	GCF	MISI	HDI	FIND	FINR
1	8.198309	18.28649	0.752028	2.463158	0.054784	78.44354	0.000000
		(12.8933)	(4.34135)	(5.74621)	(2.99913)	(14.0174)	(0.00000)
2	10.21700	11.97538	2.337493	1.998495	3.439772	75.44273	4.806129
		(9.80258)	(7.83940)	(7.25338)	(7.50386)	(14.1755)	(4.01680)
3	11.20435	10.04176	13.72474	1.693300	3.177759	67.16226	4.200183
		(8.58703)	(10.6879)	(7.55076)	(8.90012)	(12.9883)	(3.50762)
4	12.07863	8.835505	19.20998	1.457519	8.080660	57.81646	4.599884
		(8.33289)	(11.0018)	(8.91474)	(10.6326)	(12.2619)	(3.69266)
5	13.26390	8.892141	21.81500	1.237011	13.75808	47.97879	6.318979
		(8.69499)	(11.1588)	(9.01938)	(11.3228)	(11.1439)	(4.79427)
6	14.25213	10.28364	23.75870	1.269142	15.35451	41.68949	7.644522
		(9.35367)	(10.7808)	(8.86583)	(11.3639)	(9.73357)	(5.18040)
7	15.06250	11.93344	25.43514	1.334299	15.24094	38.47630	7.579878
		(10.5145)	(10.9064)	(9.32626)	(11.7794)	(8.97355)	(5.00084)
8	15.81190	12.76435	27.54780	1.231430	14.85189	36.65492	6.949610
		(10.9544)	(11.1889)	(9.44576)	(12.1248)	(9.08089)	(4.82963)
9	16.51484	12.83969	29.69579	1.150678	14.92743	35.01376	6.372652
		(11.0486)	(11.5647)	(9.51440)	(12.6057)	(9.02611)	(4.56317)
10	17.15071	12.52905	31.49330	1.176165	15.59809	33.28702	5.916385
		(11.1339)	(11.9561)	(9.37275)	(12.9611)	(8.70264)	(4.44697)

Variance Decomposition of FINR

Period	S.E.	GDPPC	GCF	MISI	HDI	FIND	FINR
1	0.120892	5.404407	26.95622	20.09952	3.444914	0.942653	43.15228
		(10.5685)	(12.7917)	(9.51392)	(3.92275)	(2.99783)	(10.5883)
2	0.156114	9.509761	19.06294	27.89197	4.147531	4.467224	34.92057
		(11.9792)	(11.1490)	(13.0533)	(5.71125)	(4.83463)	(9.25141)
3	0.191334	17.06802	27.18458	19.20925	4.942620	6.246165	25.34937
		(13.8365)	(14.2845)	(10.6768)	(6.83191)	(5.32560)	(7.97488)

4	0.222844	19.30374	32.48530	15.49415	6.576387	6.373721	19.76670
		(14.1821)	(15.2874)	(9.89186)	(8.81432)	(6.05317)	(6.65129)
5	0.252030	21.02858	33.15521	12.11864	11.54677	6.354849	15.79596
		(14.3561)	(15.5034)	(9.14152)	(11.2019)	(6.69556)	(5.80870)
6	0.278317	21.40179	33.77056	10.00545	15.66335	5.999023	13.15983
		(14.2778)	(15.6913)	(9.47512)	(12.5597)	(6.86475)	(5.49414)
7	0.298689	21.49346	33.85993	8.691390	18.26319	6.005298	11.68673
		(14.3756)	(15.7603)	(10.2073)	(13.0452)	(6.95686)	(5.32256)
8	0.313762	21.30947	34.16822	7.876666	19.61937	6.259164	10.76711
		(14.3972)	(15.6988)	(10.4779)	(13.2995)	(6.96947)	(5.31971)
9	0.325635	20.88275	34.95923	7.314583	20.09952	6.622886	10.12104
		(14.4448)	(15.7149)	(10.5850)	(13.4876)	(6.99687)	(5.33812)
10	0.335328	20.29394	35.99673	6.898984	20.20043	6.977322	9.632593
		(14.6028)	(15.8051)	(10.7337)	(13.6958)	(6.90578)	(5.26343)

Source: Author's Computation

Variance Decomposition Analysis: Tanzania

Shocks to FIND explained about 56.3% of own forecast error variance, with shocks to GCF accounting for remarkable 34.5% in the first year. In the second period, shocks to GDPPC explained proportion rose steeply to 54.0% and 54.8% in the fourth year before declining to 45.7% in the tenth year. Shocks in other variables explained significant share of variance in FIND in the tenth year, include GCF (26.2%) and own innovations stood at 20.6%. As expected, shocks to FINR accounted for 69.0% of its own variance in the first year, but declined gradually to 21.5% in the tenth year. This implies improved transmission of policy changes to other variable in the system. Shocks to GDPPC explained a high, but fluctuating, proportion of the forecast error variance of FINR, while innovations to misery index explained a rising share over the forecast horizon.

Variance Decomposition of FIND

Period	S.E.	GDPPCTAN	GCFTAN	MISITAN	HDITAN	FINDTAN	FINRTAN
1	1.692402	1.840997	34.47090	5.263496	2.080552	56.34406	0.000000
		(5.26476)	(12.7606)	(5.51720)	(3.87709)	(11.3302)	(0.00000)
2	3.371259	54.04190	20.02877	1.998174	0.532554	23.38346	0.015142
		(14.3129)	(9.51719)	(3.66422)	(3.11601)	(6.58252)	(1.56415)
3	4.090911	52.36612	22.90971	2.590327	0.365208	20.80145	0.967191
		(15.5798)	(12.5862)	(7.28375)	(5.21019)	(6.61541)	(3.81780)
4	4.325774	54.82827	22.12207	2.540202	0.710355	18.84160	0.957505
		(16.8859)	(13.9089)	(9.68078)	(7.16960)	(6.15643)	(4.26189)
5	4.403165	54.59754	21.38141	3.267076	0.779896	18.30280	1.671286
		(16.4465)	(13.5878)	(10.8878)	(8.04142)	(6.16216)	(5.01721)
6	4.475005	53.24395	22.18865	3.307947	0.881773	18.65265	1.725027
		(15.5388)	(13.4298)	(11.0303)	(8.77110)	(6.05824)	(5.07711)
7	4.556495	51.36419	23.57871	3.190939	1.047011	19.15502	1.664127
		(15.1820)	(13.5293)	(10.6169)	(9.20495)	(5.78476)	(5.64080)
8	4.648279	49.35827	24.79369	3.243624	1.222334	19.66095	1.721123
		(15.6661)	(13.9721)	(10.8138)	(9.72652)	(5.84054)	(6.29816)
9	4.737235	47.52616	25.65840	3.483241	1.297650	20.11899	1.915549
		(15.7517)	(14.2100)	(11.3144)	(9.93665)	(5.99868)	(6.94901)
10	4.833053	45.66197	26.21619	3.953856	1.300417	20.56227	2.305300

		(15.5619)	(13.9469)	(11.6114)	(10.4055)	(6.28627)	(7.26260)

Variance Decomposition of FINR

Period	S.E.	GDPPCTAN	GCFTAN	MISITAN	HDITAN	FINDTAN	FINRTAN
1	0.186440	8.249438	1.462312	13.10674	0.140196	8.036891	69.00442
		(12.2258)	(4.95375)	(9.96632)	(3.14665)	(9.31952)	(14.0413)
2	0.243028	14.45019	0.944593	11.03108	3.366637	11.77373	58.43377
		(12.6470)	(5.40866)	(9.88514)	(6.85482)	(9.45326)	(15.0926)
3	0.321800	12.61024	2.662672	14.51104	5.161859	18.12363	46.93056
		(12.0314)	(6.55951)	(11.9152)	(7.70307)	(9.80001)	(15.4674)
4	0.410664	14.38045	5.926251	17.46947	4.711255	20.91291	36.59967
		(13.2492)	(9.18748)	(13.2406)	(8.28900)	(9.85106)	(15.4302)
5	0.513457	15.42716	9.406455	19.70553	3.733022	21.82450	29.90334
		(13.6435)	(11.6797)	(14.9481)	(7.81581)	(9.52017)	(15.2207)
6	0.614444	16.69352	11.69577	20.80623	3.176372	21.73027	25.89783
		(14.1689)	(13.0813)	(15.5450)	(9.02342)	(9.20002)	(15.0277)
7	0.713171	17.71720	12.74662	21.81311	2.811549	21.14556	23.76598
		(14.6376)	(14.2826)	(16.5008)	(9.35745)	(9.13650)	(15.2591)
8	0.806183	18.72228	12.97995	22.66658	2.616875	20.42110	22.59321
		(15.0882)	(15.1379)	(16.9432)	(10.5670)	(9.28413)	(14.9332)
9	0.893651	19.64399	12.80585	23.37034	2.553461	19.70274	21.92362
		(15.5181)	(15.7281)	(17.4405)	(11.0218)	(9.49401)	(15.0519)
10	0.975846	20.53453	12.44205	23.91743	2.585820	19.02110	21.49906
		(16.1275)	(16.1917)	(17.4604)	(11.8865)	(9.62074)	(14.6882)

Source: Author's Computation

Variance Decomposition Analysis: Uganda

The forecast error variance of FIND explained by own variation in period one is about 77.1%, but declined over the forecast horizon. The remaining variation in FIND is accounted for by GDPPC (13.4%). Shocks to GCF and MISI explain a non-significant share of the variance of FIND in the forecast period, while only GDPPC and HDI appear to significantly determine variation in FIND in the tenth year. The forecast error variance of FINR explained by own shock in period one is about 90.0%, but declined over the forecast horizon, while the influence of other variables remained negligible. Shocks to GDPPC explained a high and rising proportion of forecast error variance of FINR over the periods. In the final period, shocks to GCF explained only 9.8% share of variance in FINR, while contributions of HDI, MISI and FIND accounted for a non-significant share of the variance in financial reform over the forecast period, suggesting relatively poor inter-linkage between macro-financial variables in the country.

Variance Decomposition of FIND

Period	S.E.	GDPPCUGA	GCFUGA	MISIUGA	HDIUGA	FINDUGA	FINRUGA
1	0.678967	13.44031	6.064936	3.120978	0.265288	77.10849	0.000000
		(12.0281)	(7.97060)	(5.80620)	(3.01694)	(11.9188)	(0.00000)
2	0.797255	10.24386	4.496873	2.268277	14.04941	56.57297	12.36860
		(9.77512)	(6.73544)	(6.48983)	(9.89322)	(11.2570)	(8.58938)
3	1.002970	28.06339	4.137486	6.572925	12.56387	37.94316	10.71918

		(13.6595)	(6.58190)	(8.40537)	(8.47608)	(9.48638)	(6.98750)
4	1.132826	35.04316	3.282945	6.193513	14.80547	29.84830	10.82662
		(13.6775)	(6.48821)	(9.16134)	(8.62168)	(9.18062)	(6.98950)
5	1.264689	41.03075	2.882241	5.824912	16.88955	24.09083	9.281721
		(15.5260)	(6.83244)	(10.4125)	(10.0162)	(8.92327)	(6.87225)
6	1.384010	45.59162	2.610512	5.085437	18.56088	20.40054	7.751012
		(16.2905)	(7.35359)	(11.1720)	(11.1277)	(8.86824)	(6.40852)
7	1.495950	48.85830	2.609565	4.411606	19.61909	17.64574	6.855702
		(17.6124)	(7.97112)	(12.0131)	(11.9016)	(8.79570)	(6.57459)
8	1.612540	51.81863	2.829457	3.819180	19.36751	15.42341	6.741813
		(17.7529)	(8.89954)	(12.0082)	(12.5874)	(8.70416)	(6.93502)
9	1.733366	54.33090	3.183862	3.306310	18.42979	13.53114	7.218004
		(17.7962)	(9.53254)	(12.0006)	(12.7833)	(8.45410)	(7.21419)
10	1.864767	56.53851	3.719206	2.859549	16.98988	11.83847	8.054386
		(17.9679)	(10.4091)	(11.8765)	(13.0096)	(8.26062)	(7.63929)

Variance Decomposition of FINR

Period	S.E.	GDPPCUGA	GCFUGA	MISIUGA	HDIUGA	FINDUGA	FINRUGA
1	0.103455	0.492609	0.138917	0.451340	8.734771	0.143064	90.03930
		(3.27599)	(5.22887)	(4.95135)	(8.98081)	(3.06432)	(11.5642)
2	0.153150	0.576917	1.261126	0.975308	21.48844	3.625757	72.07245
		(6.70424)	(5.38018)	(5.72233)	(12.9808)	(6.24399)	(14.0641)
3	0.178290	3.894521	0.980391	1.249713	16.59800	2.816872	74.46050
		(10.4162)	(6.42775)	(6.20295)	(11.3264)	(5.61840)	(14.4073)
4	0.209860	14.58423	0.896996	0.907969	12.23489	2.572778	68.80313
		(14.2079)	(7.56335)	(7.02405)	(9.79601)	(5.73421)	(14.6579)
5	0.232652	21.97258	1.010872	1.249021	10.02464	2.098188	63.64470
		(16.5750)	(8.19692)	(8.37550)	(9.23566)	(4.99176)	(15.3370)
6	0.260303	30.20461	2.031286	1.623758	8.043262	1.705432	56.39165
		(17.3558)	(8.73085)	(9.43026)	(8.54389)	(5.38447)	(15.9973)
7	0.287858	36.18893	3.287750	2.346969	6.579024	1.419345	50.17798
		(18.0240)	(9.12673)	(10.6771)	(8.32607)	(5.03021)	(16.1674)
8	0.316067	40.22749	5.225929	2.853588	5.458158	1.212704	45.02213
		(17.8096)	(9.72136)	(10.7418)	(8.50183)	(5.55441)	(16.3153)
9	0.344113	42.68241	7.446618	3.119532	4.612299	1.078447	41.06069
		(17.9569)	(10.3843)	(10.9783)	(8.85638)	(5.74191)	(16.2399)
10	0.371205	44.02387	9.764409	3.187722	3.984749	0.969542	38.06970
		(18.0909)	(11.2060)	(11.0990)	(9.44801)	(6.57121)	(16.1961)

Source: Author's Computation

Variance Decomposition Analysis: Zimbabwe

Shocks to FIND is accounted mainly by own variation in period 1, at about 92.3%, but declined over the forecast horizon to 61.5%. Shocks to other variables explained small share. Only shocks to GDPPC (15.1%) explained a relatively significant proportion in period 10. The forecast error variance of FINR explained by own shock in period 1 is 80.4%, but declined over the forecast horizon. GDPPC and FIND show rising significance in forecasting the movements in financial reforms, but GCF, MISI and HDI explain a very small proportion of forecast variance in FINR in the 10^{th} year forecast period.

Variance Decomposition of FIND

Period	S.E.	GDPPCZIM	GCFZIM	MISIZIM	HDIZIM	FINDZIM	FINRZIM
1	16.13155	0.018683	5.039249	1.727928	0.919876	92.29426	0.000000
		(5.01739)	(7.83425)	(4.37199)	(4.80959)	(10.4611)	(0.00000)
2	18.77491	8.970094	7.575305	2.256569	0.730467	75.63849	4.829077
		(10.2750)	(9.58712)	(8.54972)	(5.17859)	(13.2007)	(6.42738)
3	19.42561	12.19824	7.107505	2.866817	1.052414	71.79093	4.984093
		(11.0069)	(9.11648)	(8.79194)	(5.39824)	(13.3111)	(5.89091)
4	20.21667	13.95184	7.525038	3.652412	1.002493	67.08679	6.781433
		(11.9499)	(9.36421)	(8.01057)	(5.40229)	(13.2490)	(5.53718)
5	20.62807	15.21396	7.592708	3.887570	1.119950	64.72872	7.457089
		(12.3488)	(9.10308)	(9.20499)	(5.78872)	(13.5560)	(5.83342)
6	20.91630	15.57701	7.627835	3.807346	1.415408	64.24921	7.323189
		(12.3359)	(9.82940)	(9.65167)	(6.41628)	(13.6316)	(6.05539)
7	21.16930	15.53036	7.823240	3.861330	2.021741	63.61414	7.149195
		(12.6087)	(10.2137)	(9.88599)	(7.05986)	(13.5770)	(6.01594)
8	21.35486	15.35566	8.162951	3.880317	2.757962	62.81693	7.026177
		(11.8889)	(10.3623)	(10.4766)	(7.36775)	(13.6847)	(6.06975)
9	21.49920	15.15139	8.480445	3.864850	3.456283	62.11279	6.934239
		(12.5762)	(10.7167)	(11.0200)	(7.55082)	(13.6104)	(6.16306)
10	21.63521	15.09279	8.650632	3.854893	4.050074	61.48372	6.867893
		(12.2519)	(10.8296)	(11.5393)	(7.56288)	(13.6578)	(6.36830)

Variance Decomposition of FINR

Period	S.E.	GDPPCZIM	GCFZIM	MISIZIM	HDIZIM	FINDZIM	FINRZIM
1	0.136213	5.802916	10.05924	0.980622	0.579296	2.177041	80.40089
		(8.76263)	(10.3682)	(4.31904)	(3.09889)	(6.51172)	(11.9680)
2	0.191387	10.23184	7.262098	0.503288	0.486464	3.665244	77.85106
		(11.8539)	(8.55522)	(4.58243)	(4.24060)	(7.83483)	(13.1087)
3	0.235846	13.17295	5.132466	1.102896	0.592382	4.790889	75.20842
		(13.0579)	(7.27371)	(6.65846)	(5.19271)	(9.30923)	(13.8964)
4	0.276894	15.51120	3.833032	1.588261	1.020861	6.254738	71.79191
		(14.4043)	(8.15999)	(7.49478)	(5.63464)	(10.7934)	(15.4217)
5	0.317678	18.05063	2.934230	1.787111	1.669662	8.246577	67.31179
		(14.7779)	(10.0519)	(8.59445)	(6.31530)	(12.7104)	(16.2764)
6	0.358275	20.46259	2.316615	1.974703	2.318225	10.33325	62.59462
		(15.5288)	(10.8282)	(9.28500)	(6.93653)	(13.4289)	(17.0551)
7	0.398482	22.42651	1.900728	2.134319	3.026756	12.26499	58.24670
		(15.6723)	(10.7617)	(9.76853)	(7.61373)	(14.1144)	(17.2092)
8	0.438070	23.90803	1.645589	2.260199	3.834139	13.96353	54.38851
		(16.1423)	(10.9257)	(10.4163)	(7.87914)	(14.6553)	(17.3689)
9	0.476479	24.86497	1.527454	2.378143	4.739706	15.44038	51.04934
		(15.9232)	(10.8760)	(10.5885)	(8.33926)	(15.3413)	(17.3712)
10	0.513201	25.30218	1.520966	2.502550	5.742467	16.74996	48.18188
		(16.2862)	(11.4432)	(11.0440)	(8.60095)	(15.9399)	(17.2982)

Source: Author's Computation

5.4 Policy Implication of Findings

The chapter has presented the empirical results from the study. Some important policy lessons that can be learnt from this study are highlighted below.

Firstly, the results indicate that financial sector reform, especially within the banking sector, is important in improving financial development in SSA region as a whole. Additionally, a key implication for policy is that income level of each country matter in

achieving financial development through policies of financial sector reform. The study, thus by implication, suggests the existence of threshold effects using income-level effects, beyond which policies of financial sector reform, amidst institutional weaknesses and macroeconomic distortions, would have undesirable outcome for both financial development and economic performance. This intensifies the need to maintain a stable macro-economy before benefits of reform can be attained and as such support the current mainstream consensus that financial liberalisation by itself cannot be considered as a panacea for sustained economic growth and better management.

Secondly, specific dimensions of financial reform like prudential regulations/ supervision of the banking sector, financial account openness and ease in entry barriers positively and significantly boost financial development and economic performance. Policy aimed at developing the securities market produces mixed effects: while it boosts financial development, support economic growth and HDI, securities market development cause economic instability and depresses GCF. Government should, therefore formulate proactive prudential guidelines and systematic opening of domestic banking sector to external competition. Hence, the implication drawn from this empirical work is that a strong financial regulatory framework is important to maintain the stability of the financial system and to prevent costly bank failures.

Thirdly, findings of the study that State-ownership of banking sector assets and policy relating to interest rate controls support human development in SSA, provides evidence that some element of financial repression can be useful in setting pro-development strategies in low income economies, like SSA. This finding is in tandem with conclusions by Stiglitz (1994) and other Neo-Structralists (the Keynesian-Tobin-Stiglitz School) that administratively held interest rate can positively influence economic performance. The United States of America achieved some remarkable level of development via control of interest rate (from the 1930s to 1980s) and more recently China and other Asian countries. Given the importance of aggregate domestic financial reform to human development irrespective of income level and stock market effects, the region need to make efforts to sustain the current financial liberalisation drive to improve credit not only to households, but also to the SMEs often referred to as the engine for sustained economic development.

The impact of the lagged values of FINR variable should be positive and significant overtime time, but findings show no regularity (significance) in the models, and there were evidence of sign reversal among the lagged values of FINR variable, namely the 1-, 2- and 3-period. The implication is that financial reform has 'no-lag effect' in SSA. The result thus, gives insight into how financial regulators in the region execute and implement policies designed to boost the financial sector. The finding therefore, accentuates the weakness in the regulatory and supervisory framework of SSA countries, even when financial sector participants ignore statutory prudential regulations and engage in sharp practices. Implied for policy is the need for financial sector operators to fully understand financial policy changes and policy direction of monetary authorities. Following the enormous growth potentials and capacity to expand in most SSA countries, any measures aimed at financial deepening (that is increasing credit to the private sector) would likely be effective, provided institutional arrangements remains favourable.

In addition, the policy implication from our causality test results, show that reciprocal externality exists between the financial and real sectors. Hence, greater attention must be given to eliminating distortions because initiating financial policy reform in environment laden with macroeconomic and institutional uncertainties may partly explain the limited impact of financial reform across all countries in SSA. The all-pervading unsatisfactory macroeconomic environment in most SSA countries remain unresolved till date, which include weak fiscal and monetary policy coordination, undeveloped legal/ regulatory framework, high level of inflation and resource dependence. The finding presupposes the need for an urgent structural/economic-wide reforms in SSA to ensure that financial sector in the region is sound, deep and efficient in credit allocation to the deficit economic units.

The study found natural resource rent to improve the growth rate of real GDP and reduces economic instability in SSA countries, but depresses human development and produces mixed effects on capital accumulation. In particular, natural resource intensity is negatively related to financial development. As evidenced by findings in this study, resource abundance can both stimulate and dampen economic development. Hence, the understanding of its impact channels is important to developing policies so as to maximise the benefits of natural capital. These mixed findings confirm that the resource-curse thesis is not an iron law and resource abundance does not have innately damaging

effects on economic performance (Auty 2001). Thus, this result lends support the Hartwick, (1977) on appropriate strategy to managing windfall revenue from natural resources. In this regard, governments in resource-rich SSA countries should through careful management of revenues from natural resources transform their sub-soil assets into a portfolio of other assets – human capital, physical capital and financial assets that yield continuing flow of income to citizens in the long term.

Last, but not the least, results from our control for effects of income clearly show that the success of economic policies largely depends on the efficiency of the implementing institution, and this is known to vary from country to country. Thus, effects of financial reform on financial development and economic performance are not broadly the same across all SSA economies. Financial deregulation can only be put to advantage in developed and stable economies, hence financial reform should be complemented with structural reforms to ensure that it promote income growth, as well as boost other economic development indicators. Based on findings, the implication for policy makers in SSA countries is for government to establish the necessary preconditions for effective functioning of financial markets by maintaining macroeconomic stability, establishing sound regulations and encouraging competition.

CHAPTER SIX

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.1. Summary of Findings

This study empirically examined the theoretical link between financial sector reform and financial development, and also investigated the impact of financial reform on economic performance in SSA using a sample of 14 countries, data spanning 1980 and 2012. The theoretical underpinning of this study is predicated on a modified Cobb-Douglass Production Function in which financial reform as input, links development of the financial sector and economic performance. Estimation techniques for the dynamic panel models specified for the purpose of analysing objectives one (1) and two (2) were conducted using the system Generalised Method of Moments (GMM) estimator and Sargan test for over-identification restrictions was employed to establish the validity of the set of instrumental variables used in the dynamic regressions. This study also presented results from the traditional panel models for emphasis and the choice of model selection between the fixed- and random-effects models was based on Hausman model specification tests. The third objective to ascertain the causality among financial sector reform, financial development, real per capita GDP, gross capital formation, human development, and macroeconomic instability was addressed using an unrestricted panel multivariate vector autoregressive (VAR) framework. In addition, this study ascertained whether differences in income-levels and presence of domestic stock market influence the relationship between financial sector reform and macroeconomic performance. The goal for this ancillary analysis was to compare these results with those obtained from the overall sample.

The study reports the following major findings:

1. Financial sector reform, specifically, the reform of domestic banking sector, has generally led to financial development across SSA. The result shows that the effects of reform in domestic banking sector on financial development are more potent within 2 to 4 year- timeframe and the impact significance tends to decay with time. In addition, using the seven dimensions of financial sector policy show that intensifying scope of prudential regulations / supervision of the banking

sector by government, foreign account openness, removal of restriction on entry (including scope of operation of both domestic and foreign banks), as well as policy to encourage development of the securities market significantly spur financial development in the overall SSA region. Dimensions such as government ownership of stakes in the banking sector and policies on credit controls/ excessively high reserve requirements adversely affect financial development in SSA.

2. The impact of policies of financial reform on financial development appears mixed when we use differences in income levels across SSA countries. While financial reform spurs financial development in lower-middle-income and upper-middle-income economies, such policies hinder financial sector development in low-income SSA economies. This may be because high income economies are likely to have more stable institutional arrangements that cause polices of financial reform to be effective. More so, findings also show that policies of financial reform spur financial development, when we control for the effects of domestic stock market.

3. The study finds the impact of policies of financial reform on real per capita income to be significantly influenced by differences in income levels of countries in SSA. Whereas, financial reform positively and significantly promotes growth in real per capita income in both low-income economies and lower-middle-income economies, it adversely affects income growth in upper-middle-income countries. However, using the individual components of financial reform, it show that banking regulations/ supervisions, foreign account liberalization and policies to develop the securities market contribute significantly to growth in real per capita income in the overall SSA countries; whereas interest rate controls, credit controls, and reserve requirements depress real per capita income. The presence of domestic stock market also enhances the positive effects of financial sector reforms on per capita income growth.

4. Investigating the contribution of policies of financial reform to growth in gross capital formation (GCF) in SSA shows that policies of financial liberalisation promote GCF in low-income economies, but hinder it in both lower-middle-income and upper-middle economies. Specific policies of financial reform that

spur GCF include banking regulations/ supervisions, capital account openness, and State-ownership in the banking sector. In contrast, policies on securities market depress GCF. The transmission impact of policy of financial reform on GCF is positive in SSA countries with few listed companies on the stock market, but depresses GCF in both Nigeria and South Africa.

5. Policies of financial reform have a positive effect on growth in human development across all SSA income groups. In addition, the presence of stock market positively influences the relationship between financial reform and human development in SSA countries, including Nigeria and South Africa. Specific financial reform policies that significantly stimulate human development include interest rate controls, State ownership in the banking sector, and policy to develop the securities market. Entry barriers of new banks (whether domestic or foreign) was found in the study to negatively affect human development in SSA.

6. Financial sector reform shows mixed effects on economic instability (misery index) across SSA countries. The study finds that policies of financial reform reduce economic uncertainties in low-income economies; while financial liberalism generates economic instability in both lower-middle-income and upper-middle-income countries. The result shows that a marginal rise in financial reform leads to a 2.9% fall in misery index in low-income economies, while it weakens economic confidence in lower-middle and upper-middle income economies by 11.1% and 117%, respectively. This study has shown that, in the long run, policies of financial reform can both propagate and reduce economic instability in SSA countries with stock markets. Specific polices of financial reform that significantly reduce economic instability in SSA include policies on banking regulations/ supervisions and State ownership in the banking sector, while policy on securities markets growth worsen level of economic uncertainty in the region.

7. The causality analysis shows that financial reform causes growth in real per capita income (financial reform-led economic growth) in Ghana, Kenya, Madagascar, Nigeria, and South Africa, while the reverse (economic growth-led financial reform) was observed in Tanzania. There was no evidence of bi-directional causality in any of the sampled countries, while no clear flow of

causation was observed between financial reform and real per capita GDP in Burkina Faso, Cameroun, Cote d'Ivoire, Ethiopia, Mozambique, Senegal, Uganda and Zimbabwe. Also, the result indicate that 7.1% of the countries show that reform in the financial sector causes growth in GCF, 35.7% revealed that growth in GCF causes financial reform, 14.2% shows evidence of bilateral causality, while 42.8% exhibited no clear flow of causality. The test also show evidence of causality running from financial reform to human development in 42.9% of the countries covered, while 57.1% of the countries showed no clear form of causality. Lastly, only about 21.4% of the countries showed that financial reform causes economic instability, and reverse causality in only Nigeria and Senegal, whereas the remaining 64.3% provides no clear evidence that financial reform directly leads to macroeconomic uncertainties.

8. The study confirms the existence of demand-following hypothesis in Burkina Faso, Cote d'Ivoire, South Africa and Uganda, while supply-following hypothesis was observed in Cameroun and bi-directional causation was seen in Senegal. No clear flow of causation was found in eight countries, namely Ethiopia, Ghana, Kenya, Madagascar, Mozambique, Nigeria, Tanzania and Zimbabwe. GCF causes financial development in Burkina Faso and Kenya; while the reverse is observed in Zimbabwe, but a bilateral relationship exit in both South Africa and Tanzania. There is no clear flow of causality in the remaining nine countries. Financial development causes economic uncertainty in five countries studied, namely Cote d' Ivoire, Kenya, Senegal, Tanzania and Uganda, but reverse causality was observed in Mozambique while bilateral causation exist in Cameroun and Madagascar. The remaining six countries showed no causality between economic instability and financial development. Human development causes financial development in three countries, namely Kenya, Nigeria and South Africa, indicating that improvement in human capabilities and possibly income lead to increases in the propensity to savings in the formal banking sector, hence spur financial development. For Tanzania and Zimbabwe, causation runs from financial development to human development, suggesting that improved access to finance boosts human development in those countries.

9. Lastly, natural resource dependence was found to adversely affect the size and development of financial sector in SSA, providing evidence of 'resource curse' in

the financial sector. A significant rise in inflation was found to undermine the development of the financial sector, revealing existence of broad-based macroeconomic misalignment in the region. Real per capita GDP promotes financial development, confirming that growth-conditioned demand for financial services boosts the financial sector in SSA. Government intervention in the period under study was observed to also support financial development in SSA. Additionally, the study provides empirical evidence that increase in formal school enrolment rate worsens the economic misery index in SSA. This study proposes the term human capital-misery trap syndrome to denote association of higher human capital and economic instability.

6.2 Policy Recommendations

The following are recommendations based on empirical results from the study. Firstly, empirical evidence from the study shows that financial sector reforms positively impact financial development, through which growth in gross capital formation and real GDP can be achieved. The study also confirms the linkage among financial sector reforms, financial development and economic performance, thus corroborating the argument of finance-economic performance interdependence. We know that a healthy and developed financial system propels investment and economic growth, while economic growth also has a positive influence on financial development. Likewise, policies of financial reform will not likely lead to higher economic performance without the presence of an efficient financial system, while also financial reform will not result in financial development without a stable real sector macro-environment, thus confirming the reciprocal externality between financial and real sectors. The result suggests that policies aimed at financial development can stimulate growth of per capita income; likewise inappropriate financial policies would create uncertainties in the real economy. To this ends, economic policy makers are advised to consider both real and financial sector in designing and implementing policy reforms. Policy reforms in the two sectors should be implemented concurrently. Since, findings show that raising the levels and accessibility to credit via financial reform process could be used to curb unemployment; this study submits that adequate and properly coordinated financial liberalization would significantly improve economies of SSA countries.

Secondly, empirical finding from this study suggests financial liberalisation policy is having a uniformly positive impact on human development index across all SSA income groups. The result shows that human development have been improved by policies of financial reform in the past three decades as reform measures may have increased availability and access to credit by households. SSA region is known to house the highest number of the so-called core-poor in the world, such that a marginal increase in access to funds by the poor for investment will more than proportionately raise the level of human development in the region. Although the degree of financial intermediation in SSA countries is still relatively low, the finding that financial reform directly leads to improved human development rests on the fact that policies of financial reform have, on average, enhance the level of financial development in the continent. Financial development is known to spur economic growth during the early stages of development, as such the benefits trickles-down to the poor through improvement in overall societal welfare. It is in this regard we recommend monetary authorities to effectively synchronise monetary policy objectives with financial reforms to improve employment opportunities, reduce poverty and support human development, since financial sector is the primary conduit through which monetary policy affects real economic outcomes. Access to a more diversified financial services/ products induced by policies of financial reforms would support inclusive growth that reduces poverty and inequality.

Empirical findings from this study unveiled the possibility that policies of financial sector reform could generate economic uncertainties in SSA, especially in lower-middle-income and upper-middle-income economies. However, financial reform was observed to reduce the spate of economic instability in low-income economies. In addition, the study also provided evidence that financial liberalisation can both propagate and reduce economic instability in SSA countries with stock markets. This presupposes the need for effective monitoring/supervision of the interactions between financial institutions and macro-economic policies. Hence, policy-makers and monetary authorities alike should ensure that potential bubble in the financial sector do not spill-over to other sectors of the economy. Hence, improving the quality of domestic macro-economic policies would likely help in achieving these tasks.

Additionally, SSA countries must make conscious effort to reduce or eliminate the negative effects of natural resource dependence on the development of the domestic

financial sector. The study also finds resource dependence to have a destabilising impact on capital accumulation and human development index. The stupendous extravagance with which some SSA governments greeted resource windfall is an example of financial imprudence. Hence Natural Resource Stabilization Fund should be established to 'smoothen out' the effects of resource price volatility to be able to manage the so called 'resource curse' and prevent higher revenue from translating immediately into greater aggregate demand and inflation. A stable rate of inflation would boost financial sector development in the region. Countries known to have avoided resource curse include Botswana, Malaysia, Norway, Indonesia, Australia and Canada, as they implemented sound pro-development strategies (Ross, 2001). Real per capita GDP was found in the study to significantly promote financial development in SSA, implying that the demand for financial services stimulate the development of the financial sector. The result gives credence to the transmission effect that higher level of income leads to higher output per individual which spur savings, and thus support financial development.

Empirical findings from this study suggest the formal credit market have not induced the desired economic performance effect across SSA countries. This has useful policy implications for the entire region. From time series data of most SSA countries, the spread between the deposit and lending interest rates remains wide, thereby increases cost of funds for prospective borrowers, although entails higher profits for banks in the region. Thus, policy makers in the region should re-examined interest rate policy to enhance the growth-inducing effects of formal financial institutions in the region by removing financial intermediation inefficiency. The finding that financial liberalisation causes macroeconomic distortion in 21% of the sampled countries testify to the need to institutionalise the process of financial reforms across SSA countries so as to benefit from the growth-inducing effects of financial policy reforms on economic development.

Given that informal credit institutions coexist with modern financial institutions in most SSA countries, effective financial sector reforms may cause the lending interest rates charged by informal financial institutions to decline. This is because as more borrowers have access to the formal markets, the curb market rates may decline as competition makes players in the curb market to revise their lending rates downward. This benefit of lower interest rates will result in a gain to the whole economy since borrowers who are rationed out of the formal market can access credit to engage in productive /trading

activities. Thus, effort should be made to harness the relative complementarities between the formal and informal financial markets in the region.

Last, but not the least, this study finds evidence that policies relating to financial repression, like interest rate controls and credit controls potentially support human development in SSA. This finding is partly in consonance with the Neo-Structralists School of finance and growth that financial repression can positively influence economic outcome. Therefore, respective governments in SSA countries can systematically use strategies such as selective credit programmes to direct finance to the real (priority) sectors of the economy, especially as the continent remained less developed. With the existence of huge developmental gap in the region, administratively held rate at low level can potentially reduce cost of funds to the majority of the core-poor in the region, thereby bolstering economic development.

6.3. Contribution to Knowledge

The study adds to the existing knowledge in the following aspects:

1. The study adds to the existing literature on the relationship between domestic financial reform and financial development in the context of SSA, confirming that the gradual implementation of financial liberalisation policies led to a significant increase in financial development in the SSA region, as measured by credit to the private sector and liquid liabilities of banking sector. In addition, this study has confirmed through empirical evidence that the causal effect of aggregate financial policy reform on financial development is strictly unidirectional and short-term for the overall SSA, as the level of significance of reform declines noticeably after a 4-year period.

2. Also, a review of extant literature shows that none of the existing studies, to the best of our knowledge, explain how the income level and the presence of domestic stock exchange influence the relative impact of policy of financial reform on financial development and economic performance. The result that financial reform spurs financial development in lower-middle-income and upper-middle-income countries, but hinders it in low-income SSA economies appears novel and thus represents a contribution to knowledge. Findings also show that the presence of stock market is

important in explaining the transmission-effect of financial reform to financial development and economic performance. These results constitute important contributions to the finance literature, especially within a developing economic region like SSA.

3. The use of the seven (7) individual dimensions of financial reform policy in this study, in addition to estimations using the aggregative financial reform index, appears novel in the finance-economic performance literature. Findings from the study show that banking supervision, financial openness and policy of securities market positively and significantly influence financial development. These three (3) variables also positively affect the real economy. Credit controls/ high reserve requirements, government-ownership of banking sector assets, and interest rate controls hinder financial development and per capita GDP growth. However, policies relating to financial repression, like interest rate controls and credit controls were observed to support human development in SSA. The latter result aptly shows that directed credit and appropriate interest rate management can boost the achievement of inclusive growth in SSA. To the best of our knowledge, no known study has investigated the impact of each dimensions of financial sector policy on financial sector and the real economy using data obtained for SSA. In addition, this study has revealed that similar policies of financial reform can simultaneously strengthen financial development and economic performance.

4. Important variables, like government intervention, natural resource dependence, legal origin and presence of risk experts (captured by secondary school enrolment), that have not been accounted for in reviewed empirical studies were incorporated in this study and have been found to be important factors that affect both financial development and economic performance in SSA. Also, increases in real per capita GDP was found in the study to significantly promote financial development in SSA. Thus, this study has confirmed that conditioned demand for financial services boosts development of the financial sector in the continent and that resource dependence adversely affects financial development in SSA.

5. Finally, on the causality analysis, this study has obtained empirical evidence showing the nature of the causal relationship among financial sector reform, financial

development and economic performance. The results indicate the existence of diverse form of causality among the variables. To the best of our knowledge, this appears to be the first study to investigate the relationship among these variables in SSA. Other known studies in this area only incorporated financial development and economic growth, leaving out some fundamental variables in the equation, namely financial reform, gross capital formation, human development and indicator to capture economic (uncertainty) misery. Thus, the results from this study serves as a platform upon which other studies can improve to understand how these variables interact to inform guided policy in SSA countries.

6.4 Agenda for Further Research

The following are some of our thoughts regarding agenda for further studies on effects of policies of financial sector reform on financial development and economic performance in a sub-Saharan Africa.

Firstly, this study focuses mainly on effects of internally-induced financial liberalisation (of the banking sub-sector) on financial development and economic performance. There was no attempt to explicitly investigate the influence of the capital market on financial development and economic performance by directly including indicators of capital market development in the estimated models of this study. Our motivation was driven by the fact that capital markets in most SSA countries remain shallow with little or no sophistication in traded financial instruments (see Levine, 1995). Hence, most measures of the capital market are relatively unimpressive and foreign participation in the market is often in form of short-term portfolio investments, and not longer-term equity investments that actually support real sector growth. Consequently, indicators of capital market activities in SSA like the size of the stock market/ liquidity, number of listed companies, ratio of market capitalisation to GDP, value of shares traded and turnover ratios, although improving, but continue to under-perform when compared to other developing economies. In most SSA, instruments of money market are relatively broader than that of the capital market and are generally composed of the banking sector. To remedy, we controlled for stock market effects so as to ascertain whether presence and activities in the stock market influences the nature of impact of financial reform on financial development and economic performance in sampled SSA countries. Under this approach, the study was able to show whether the presence of stock market has been growth-

inducing in the region or not. However, further studies in this direction could be geared towards ascertaining the impact of external financial sector liberalisation, and in particular, find the direct influence of capital market reform on financial development and economic performance. This may further help to broaden the understanding of financial and real sector interactions, and hence, scope of policy making and implementation in the region.

Secondly, we also suggest that further research on the impact of financial sector reform on financial development and economic performance should attempts to determine the threshold values of respective components of reforms that can lead to improved financial development or economic performances. Knowledge of financial reform threshold value may enhance the ability of financial policy makers to design and implement appropriate strategy to deepen the financial sector and improve its linkage with the real sector of the economy. It will arm policy makers on trade-off that can be tolerated, thereby increasing the gains from policy coordination amongst all components of financial sector reform. We believe that the introduction of thresholds into the modelling exercise could prove a seemingly daunting but ultimately rewarding activity for guided policy formulation.

In addition, further studies can explore the impact of policies of financial reforms on sectoral performance so as to gain understanding of how different sectors of the economy respond to deep financial strategy. More so, while this study examined impact of financial sector reform on human development in SSA through quantitative secondary data approach, it could also be interesting to conduct a micro-level study using primary data to understand the welfare-inducing or distorting effects of financial sector reform on economic development. The effect of financial sector reform on financial development can also be carried out via a micro-study approach on its impact on saving mobilisation, credit provision and accessibility.

Lastly, it may also be interesting to further explore the interrelationship among policies of financial sector reform, financial development and broad-based macroeconomic indicators without the assumption of perfect information and competition, using other modelling and estimation technique, such as Computable General Equilibrium Micro-Simulation Framework to see how these compare with the method employed in this study.

6.5 Conclusion

This study examined the dynamic relationship between financial sector reform and financial development, and also the influence of financial sector reform on chosen economic performance indicators, namely real per capita income, gross capital formation (% of GDP), human development and misery index. Dynamic panel models were estimated using the system Generalised Method of Moments (sGMM) estimator. The study tested casual relationship among financial sector reform, financial development and economic performance, using an unrestricted panel multivariate Vector Autoregressive (VAR) technique irrespective of whether there exist any co-integrating relationships. The variance decompositions, dealing with the percentage contribution of the variables in the system to variations in other variables, were also analysed and discussed. This study also ascertains whether differences in income grouping and presence of stock market in SSA influence the relationship of financial sector reform to financial development and economic performance. A total sample of 14 SSA countries was used in the analysis over a period of 33 years (1980 to 2012).

On the basis of the association between financial sector reform and financial development, this study strongly suggests that policies of financial sector reform has led to improved level of financial development in SSA countries and that the intensity of association is strongest within two to four years. Hence, the study underscore that the link between financial reform and financial development is of great importance to policymakers in developing economies. Also, using differences in income categories of SSA countries as control, we found that policies of financial reform spur financial development in lower-middle-income and upper-middle-income SSA economies, but hinders financial development in low-income countries. Findings also show that presence of stock market increases the positive transmission-effect between financial reform and financial development. Thus, the study supports the urgent need for SSA countries to develop financial market infrastructure and create appropriate institutional environment which foster financial intermediation.

In relation to the second objective, this study confirms the reciprocal interactions between finance and the real sectors. Findings show mixed effects of contribution of policies of financial sector reform to economic performance in SSA countries. Higher levels of reform significantly promote growth in real per capita income in both low-

income economies and lower-middle-income economies, but adversely affect per capita income growth in upper-middle-income countries. Policies of financial liberalisation was found to promote GCF in low-income economies but hinders capital formation in both lower-middle-income and upper-middle-income economies. Financial sector reform has broadly positive effect on human development. However, it reduces economic uncertainties in low-income-economies; while generating economic instability in both lower-middle-income and upper-middle-income economies.

On contributing to knowledge, this study has provided evidence from the first and second objectives that policies of financial sector reform can directly influence financial development, as well as, broad-based macroeconomic performance indicators. Also, the results from the causality tests have shown the existence of financial reform-led economic growth, economic growth-led financial reform, as well as reverse causality in diverse countries studied. The nature of causality of financial reform and other performance variables used in the study, like gross capital formation, human development and economic instability (measured by the misery index) also suggests the existence of mixed effects. The study has also shown that poorly conceived financial sector reform can distort macroeconomic stability. To this ends, this study contributes to the finance-growth literature and could generate a continuum of study on the finance-performance nexus.

The results of the study have shown that natural resource dependence adversely affects the financial sector development in SSA, providing evidence of 'resource curse' in the financial sector. This explains the relatively shallowness of the financial system, especially banking, across SSA. The study also finds resource dependence to have a destabilising impact on capital accumulation and human development. Resource dependent countries are often challenged by external shock, especially in commodity prices. Since the health of their economies is resource-based, the entire macro-economy and also financial sector remain highly vulnerable to such business cycles. The finding suggests that for SSA countries to substantially reap the benefits of financial development and its transmission effect on economic development, deliberate attempts should be made by successive governments in the continent to diversify their economies from over-reliance on single narrow inelastic natural resource.

The results also showed that, inflation, which represents macroeconomic policy environment in this study, generates disturbances in the financial sector and hence, affect the development of the sector in SSA. Inflation was also found to have destabilising consequence across all performance indicators employed in the study. Inflation is known to reduce real value of savings and income. The presence of high and structurally-induced inflation in most developing economies, including SSA, may explain the under-developed banking systems and poor economic outcomes in the continent, compared to other regions. To this ends, the result intensify the need for monetary authorities of each countries in the region to adopt appropriate policy to stabilise inflation rate so as to boost financial development and economic development. Real per capita GDP was found in the study to significantly promote financial development in SSA, confirming that conditioned demand for financial services actually boosts development of the financial sector in the continent. This result implies that increases in real GDP per capita enhance financial development in SSA and finding is consistent with Levine, (1997); Khan and Senhadji (2003); and Akinlo and Egbetunde (2010),

BIBLIOGRAPHY

Abdelhafidh S., (2013). Potential financing sources of investment and economic growth in North African countries: A causality analysis, *Journal of Policy Modelling*, 35(1),150–169.

Abiad, A., Detragiache, E., and Tressel, T. (2010). A new database of financial reforms. *IMF Staff Papers*, 57(2), 281-302.

Abiad, A, .Oomes, N. and Ueda, K (2008). The quality effect: Does financial liberalisation improves the allocation of capital? *The Journal of Development Economics*, 87(2), 270-280.

AbuAl-Foul, B., (2010). The causal relation between savings and economic growth: Some evidence from MENA countries. Proceedings of the 30th annual meeting of the Middle East Economic Association, January 3-6, Atlanta, GA, USA.

Acemoglu, D., Aghion, P., Lelarge, C., Van Reenen, J., and Zilibotti, F. (2006). Technology, information and the decentralization of the firm), *NBER Working Paper No. W12206.* National Bureau of Economic Research, Cambridge, MA.

Acemoglu, D., and Zilibotti, F. (1997). Was Prometheus unbound by chance? Risk, diversification, and growth. *Journal of Political Economy, 105*(4), 709-751.

Adedeji, S.O. and Bamidele, R.O. (2002) Economic Impact of Tertiary Education on Human Capital Development in Nigeria. Proceedings of Annual Conference on Human Resource Development in Africa by the Nigerian Economic Society, Ibadan.

Adelegan, O. J. and Radzewicz-Bak, B. (2009). What determines bond market development in Sub-Saharan Africa? *IMF Working Paper* 09/213. Washington: International Monetary Fund.

Afonso, A. and D. Furceri (2010). Government size, composition, volatility and economic growth, *European Journal of Political Economy*, 26(4), 517-532.

Agbetsiafa, D., (2004). The finance-growth nexus: Evidence from Sub-Saharan Africa. *Savings and Development,* 28(3), 271-288.

Agca, S, G. De Nicolo and E. Detragiache, (2008). Financial reforms, globalisation and corporate leverage: International evidence. Unpublished, International Monetary Fund.

Agenor, P. (2004). The economics of adjustment and growth, 2nd ed. Cambridge, Massachusetts: Harvard University Press.

Aghion, P., and Bolton, P. (1997). A theory of trickle-down growth and development. *The Review of Economic Studies*, 64(2), 151-172.

Aghion, P., and Howitt, P. (1998). Endogenous growth theory. Cambridge, MA: MIT Press.

Aghion, P., Angeletos, G.M., Banerjee A., and Manova, K. (2005). Volatility and growth: credit constraints and productivity-enhancing investments, *NBER Working Paper 11349*, National Bureau of Economic Research, Cambridge, MA.

Agrawal, P. (2001). The relation between saving and growth: Cointegration and causality evidence from Asia. *Applied Economics*. 33, 499-513.

Ahmed, A.D. (2010). Financial liberalization, financial development and growth linkages in Sub-Saharan African countries: An empirical investigation. *Studies in Economics and Finance*, 27(4), 314-339.

Ahmed, A.D. and Islam, S.M.N., (2010). Financial liberalisation in developing countries: issues, time series analysis and policy implications, Springer-Verlag Berlin Heidelberg.

Ahn, S.C. and Moon, H. (2001). Large-N and Large-T properties of panel data estimators and the hausman test (August 2001). USC CLEO Research Paper No. C01-20. Available at SSRN: http://ssrn.com/abstract=283252 or http://dx.doi.org/10.2139/ssrn.283252

Ajakaiye O. (2005). Role of the State in financial sector development in Sub-Saharan Africa in Jan Joost Teunissen and Age Akkerman (ed) African in the World Economy: National, Regional and International Challenges (FONDAD, The Hague)

Akinlo, A. E., and Egbetunde, T. (2010). Financial development and economic growth: The experience of 10 sub-Saharan African countries revisited. *The Review of Finance and Banking*, 2(1), 17-28.

Al-Yousif, Y. K. (2002). Financial development and economic growth: Another look at the evidence from developing countries. *Review of Financial Economics* (11), 131-150.

Alesina, A., Spolaore, E., and Wacziarg, R. (2000). Economic integration and political disintegration. *American Economic Review*, 90(5), 1276-1296.

Alexander, W.E., Balino, T.J.T., and Enoch, C. (1995). The adaptation of indirect instruments of monetary policy. *Occasional papers 126.* Washington, D.C: International Monetary Fund.

Allen, F., Carletti, E., Cull, R., Qian, J., and Senbet, L. (2010). The African financial development gap. Retrieved from http://fic.wharton.upenn.edu/fic/papers/10/10-18old.pdf.

Allen, F.,and Gale, D. (1997). Financial markets, intermediaries, and inter-temporal smoothing. *Journal of Political Economy*, 105(3), 523-546.

Allen, F., and Gale, D. (2000). Comparing financial systems. Cambridge, Massachusetts: MIT Press.

Allen, D. S., and Ndikumana, L. (2000). Financial intermediation and economic growth in Southern Africa. *Journal of African Economies*, 9(2), 132-160.

Ang, J.B., and McKibbin, W.J. (2007). Financial liberalization, financial sector development and growth: Evidence from Malaysia, *Journal of Development Economics*, 84, 215-233.

Anoruo, E. and Ahmad, Y. (2001). Causal relationship between domestic savings and economic growth: Evidence from seven African countries. *African Development Review*. 13, 238-249.

Anyanwu, J. C. (1995). Structural adjustment programmes, financial deregulation and financial deepening in Sub-Sahara African Economies: The Nigerian case. *Journal of Economic and Financial Review*, 1, 1-23.

Anyanwu, J. C., Oyefusi, A., Oaikhenan, H., and Dimowo F.A. (1997). Structure of the Nigerian economy 1960–1997, JOANEE Educational Publishers Ltd, Onitsha, Nigeria.

Apergis, N. (2000). Public and private investments in Greece: Complementary or substitute goods? *Bulletin of Economic Research*, 52 (3), 225-234.

Arcand, J. L., Berkes, E., and Panizza, U. (2012). Too much finance? *IMF Working Paper No12/161*. Washington: International Monetary Fund.

Arellano, M. and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58, 277-297.

Arellano, M. and Bover, O. (1995). Another look at the instrumental variable estimation of error components models. *Journal of Econometrics*, 68, 29-52.

Arestis, P., and Glickman, M. (2002). Financial crisis in Southeast Asia: Dispelling illusion the Minskyan way. *Cambridge Journal of Economics*, 26(2), 237-260.

Arestis, P., Demetriades, P.O., and Luintel, K.B. (2001). The role of financial development in growth and investment. *Journal of Money, Credit and Banking*, 33(1), 16-41.

Arestis, P., and Caner, A., (2004). Financial liberalisation and poverty: Channels of influence. Working Papers Series No. 411, Levy Economics Institute of Bard College, Annandale-on-Hudson, New York.

Arestis, P., and Demetriades, P.O. (1999). Financial liberalisation: The experience of developing countries. *Eastern Economic Journal*, 25(4), 441-457.

Aryeetey, E. (2003). Recent developments in African financial markets: Agenda for further research. *Journal of African Economies*. 12(suppl 2), 111-152.

Aryeetey, E., Hettige, H., Nissanke, M., and Steel, W. (1996). Financial market fragmentation and reforms in Sub-Saharan Africa. (Working Paper). Private Sector Development and Economic Division, World Bank.

Aryeetey, E., and L.M. Senbet, (1999). Essential financial market reforms in Africa, *Technical publication No. 63*. ISSER Technical Publication Series, University of Ghana, Accra.

Asteriou, D., and Hall, S.G. (2007). Applied Econometrics (Revised Edition), Palgrave Macmillan, New York.

Athukorala, P C (1998). Interest rates, saving and investment: Evidence from India, *Oxford Development Studies*, 26 (2), 153–169.

Athukorala, P. C., and Sen, K. (2002). Saving, investment and growth in India. New Delhi: Oxford University Press.

Atiyas, I. (1998). The private sectors response to financial liberalisation in Turkey: 1980-1992. *World Bank PPR Working Papers, No. 147*.

Aziakpono, M., and Babatope-Obasa, S.(2003). Financial liberalisation, currency substitution and savings in Nigeria: Evidence from cointegration and error correction modelling. Paper presented in 8th annual conference on econometric modelling for Africa of the African Econometric Society, July, 1-4.

Auty, R.M. (2001). Resource abundance and economic development, Oxford University Press, Oxford.

Ayadi, R., Arbak, E., Ben-Naceur, S and Pieter De Groen W., (2013). Financial development, bank efficiency and economic growth across the Mediterranean. *Mediterranean Prospect (MEDPRO) Technical Report No. 30/March 2013.* Available at MEDPRO (www.medpro-foresight.eu) and CEPS (www.ceps.eu) websites.

Ayara, N.N. (2003). The paradox of education and economic growth in Nigeria: Empirical evidence, Selected papers from the 2002 Nigerian Economic Society Annual Conference, Ibadan.

Bagehot, W. (Eds.) (1873). Lombard street: A description of the money market. New York: Scribner.

Baharumshah A.Z. and Thanoon, M.A. (2006). Foreign capital flows and economic growth in East Asian countries. *China Economic Review*, 17(1), 70-83.

Bakwena, M., and Bodman, P. (2008). The role of financial development in natural resource abundant economies: Does the nature of the resource matter? Macroeconomic Research Group *Discussion Paper Series 22*

Bakwena, M., and Bodman, P. (2010). The role of financial development in natural resource abundant economies: Does the nature of the resource matter? *Botswana Journal of Economics*, 7(11), 16-31

Baliamoune, M.N. and Chowdhury (2003). The long-run behaviour and short-run dynamics of private saving in Morocco. *Saving and Development*, 27(2):135-160.

Bandiera, O., Caprio, G., Honohan, P., and Schiantarelli, F. (2000). Does a financial reform raise or reduce savings? *The Review Economics and Statistics* 82(2): 239-263.

Barro, R (1991), Economic growth in a cross–section of countries. *Quarterly Journal of Economics*, 106(11), 407-443.

Bayoumi, T.J. (1993). Financial deregulation and household savings. *Economic Journal*, 103(421): 1432-1443.

Beck, T., (2011). Finance and Oil: Is There a Curse in Financial Development? *European Banking Centre Discussion Paper, No. 2011-004*. Tilburg, Netherlands.

Beck, T., Büyükkarabacak, B., Rioja, F.K., and Valev, N.T (2012). Who gets the credit? Household vs. firm lending across countries. *Centre for Economic Research Series Discussion Paper No 2009-41*. Tilburg University, Netherlands.

Beck, T., Demirgüç-Kunt, A. and Maksimovic, V. (2005). Financial and legal constraints to firm growth: Does size matter? *Journal of Finance*, 60, 137–177.

Beck, T,, Levine, R. and Loayza, N. (2000). Finance and sources of growth. *Journal of Financial Economics*, 58 (1&2), 261-300.

Beck, T., Lundberg, M.K.A., and Majnoni, G., (2001). Financial intermediary development and growth volatility: Do intermediaries dampen or magnify shocks? World Bank Policy Research Working Paper No. 2707

Bekaert, G., Harvey, C.R., and Lundblad, C. (2001a). Emerging equity markets and economic development, *Journal of Development Economics*, 66, 465-504.

Bekaert, G., Harvey, C.R., and Lundblad, C. (2001b). Does financial liberalisation spur growth? *NBER Working Paper w8245*. Cambridge, MA: National Bureau of Economic Research

Bekaert, G., Harvey, C.R., and Lundblad, C. (2005). Does financial liberalisation spur growth? *Journal of Financial Economics*, 77(1), 3-55.

Bencivenga, V.R., and Smith, B.D. (1991). Financial intermediation and endogenous growth. *Review of Economic Studies*, 58(2), 195-209.

Bencivenga, V. R., Smith, B.D., and Starr, R. (1995). Transaction costs technological choice and endogenous growth, *Journal of Financial Economics*, 34 (2), 31-51.

Benhabib, J. and Spiegel, M.M. (2000). The role of financial development in growth and investment, *Journal of Economic Growth*. 5, 341-360.

Berglöf E., and Bolton P. (2002). The great divide and beyond: Financial architecture in transition, *The Journal of Economic Perspectives*, 16(1), 77-100.

Berthelemy, J.C., and Varoudekis, A. (1996). Financial development policy and growth. Development Centre Studies, Long-term growth series. OECD.

Berube, G., and Cote, D. (2000). Long-term determination of personal savings rate: Literature review and some empirical result for Canada. Working Paper 2000-2003. Bank of Canada.

Bittencourt, M. (2008). Inflation and financial development: evidence from Brazil, United Nations *WIDER Research Paper, 2008/14*, February 2008.

Blejer, M and Mohsin, K (1984). Private investment in developing countries, *IMF Staff Papers*, 31, 379–403.

Blundell, R. and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87, 115-143.

Bonfiglioli, A. (2008). Financial integration, productivity and capital accumulation. *Journal of International Economics*, 76(2), 337-355.

Boot, A.W.A., and Thakor, A. (1997). Financial system architecture, *Review of Financial Studies*, 10, 693-733.

Boyd, J.H., Levine, R. and Smith, B.D. (2001). The impact of inflation on financial sector performance, *Journal of Monetary Economics*, 47(2), 221-248.

Burnett, N., Marble, K., and Patrinos, H.A. (1995). Setting investment priorities in education. Finance and Development: Development, pp42-45.

Burkett, P., and Dutt, A.K. (1991). Interest rate policy, effective demand and growth in LDCs, *International Review of Applied Economics*, 5(2), 127-153.

Camen, U., Ncube, M., and Senbet, L.W. (2008). The role of financial system in the operation of monetary policy in Africa. In Ncube, M.,(eds), Financial systems and monetary policy in Africa, Nairobi: African Economic Research Consortium.

Campbell, J. and Mankiw, G. (1991). The response of consumption to income: A cross-country investigation. *European Economic Review*, 35, 723-767Carby Y., R. Craigwell, A. Wright and A. Wood (2012). Finance and growth causality: A Test of the Patrick's stage-of-development hypothesis. *International Journal of Business and Social Science* 21(3).

Caporale, G.M., Rault, C., Sova, R., Sova, A. (2009). Financial development and economic growth: Evidence from 10 new EU Members, German Institute for Economic Research, *DIW Discussion Papers 940,* Berlin October 2009.

Cardoso, E (1993). Private investment in Latin America, *Economic Development and Cultural Change*, 41, 833-848.

Carroll C., and Weil, D. (1993). Saving and growth: A reinterpretation. *NBER Working Paper, No. 4770*. National Bureau of Economic Research, Cambridge, MA.

Cavoli, T., Rajan, R., and Siregar, R. (2003). A survey of financial integration in East Asia: Trends, issues and implications. Report prepared for the Asian Development Bank.

Cetorelli, N. and Strahan, P.E. (2006). Finance as a barrier to entry: bank competition and industry structure in local US. markets. *Journal of Finance*. 61(1). 437–61.

Chandrasekhar, C.P. (2004). Financial liberalisation and macroeconomics of poverty reduction, Draft thematic summary on financial liberalisation for the Asia-Pacific Programme on macroeconomics of poverty reduction, May.

Chinn, M.D and Ito, H. (2002). Capital account liberalization, institutions and financial development: Cross country evidence. *NBER Working Paper No. 8967*. National Bureau of Economic Research, Cambridge, MA.

Chinn, M. D. and Ito, H. (2005) What matters for financial development? Capital controls, institutions, and interactions. *UC Santa Cruz SCCIE Working Paper No. 05-03.*

Chipeta, C. (1994). The links between the informal and the formal/semi-formal financial sectors in Malawi. *African Journal of Economic Policy*, 1(1), 159-184.

Chirwa, E. W. (2001). Market structure, liberalisation and performance in the Malawian banking sector. *AERC Research Paper 108.* Nairobi: African Economic Research Consortium.

Cho, Y.J. (1986). Inefficiencies from financial liberalization in the absence of well-functioning equity markets. *Journal of Money, Credit and Banking*, 18(2), 191-99.

Claessens, S. (2005). Access to financial services: A review of the issues and public policy objectives, *Policy Research Working Papers No. 3589*, Washington: World Bank.

Claessens, S., and Forbes, K.J. (2001). International financial contagion. Boston: Kluwer.

Collier, P., and Hoeffler, A. (2005). Resource rents, governance, and conflict. *Journal of Conflict Resolution*, 49(4), 625-33.

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

Cooray, A. (2011). The role of the government in financial sector development, *Economic Modelling*, 28(3), 928–938

De Gregorio, J. (1992). Economic growth in Latin America, *Journal of Development Economics*, Vol. 39.

De Gregorio, J. and Guidotti, P.E. (1995). Financial development and economic growth. *World Development*, 23(3), 433–448

Dehejia, R., and Gatti, R. (2002). Child Labour: The Role of Income Variability and Access to Credit Across Countries. *NBER Working Paper No. 9018*, National Bureau of Economic Research, Cambridge, MA.

De Melo, J. and Tybout, J. (1986). The effect of financial liberalization on savings and investment in Uruguay, *Economic Development and Cultural Change*, 34(3), 561-587.

Dematriades P.O. and Hussain, K.A. (1996), Does financial development cause economic growth? Time series evidence from 16 countries. *Journal of Development Economics* 51,387-411.

Demetriades, P., and S. Law (2006). Financial institutions and economic development, *International Journal of Finance and Economics*, 11, 245-260.

Demirgüç-Kunt, A. and Levine, R. (1996). Stock market, corporate finance and economic growth: An overview. The World Bank Review 10(2), 223-239.

Demirgüç-Kunt, A., and Levine, R. (1996). Stock market development and financial intermediaries: Some stylized facts. *World Bank Economic Review*, 10, 291-322.

Demirguç-Kunt A., and Detragiache, E. (1998). Financial liberalization and financial fragility. *IMF Working Paper WP/98/83*, Washington: International Monetary Fund.

Demirgüç-Kunt, A., Laeven, L. and Levine, R. (2004). Regulations, market structure, institutions, and the cost of financial intermediation, *Journal of Money, Credit, and Banking*, 36(3), 593-622.

Demirgüç-Kunt, A., and Levine, R. (2001). Financial structure and economic growth: A cross-country comparism of banks, markets and development. Cambridge, MA: MIT Press.

Demirgüç-Kunt, A., and Levine, R. (2008). Finance, financial sector policies and long-run growth, *Policy Research Working Paper No. 4469.* The World Bank Development Research Group,

Demirgüç-Kunt, A. and Maksimovic, V. (1998). Law, finance, and firm growth, *Journal of Finance,* 53, 2107–2137.

Detragiache, E., Gupta, P., and Tressel, T. (2005). Finance in lower-income countries: An empirical exploration. *IMF Working Paper, WP/05/167*. Washington: International Monetary Fund.

Diamond, D and Dybvig, P. (1983). Bank runs, liquidity and deposit insurance. *Journal of Political Economy*, 91, 401-419.

Diamond, D.W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*, 37, 393-414.

Diaz-Alenjandro, C. (1985). Goodbye financial repression, hello financial crash. Journal of Development Studies, Vol 19, No. 1-2 (Sept-Oct).

Dickey, D.A., and Fuller, W.A. (1981). Likelihood ratio statistics for autoregressive time series with unit root, *Econometrica*, 49, 1057-1072.

Didier, T., Hevia, C., and Schmukler, S.L (2011). How Resilient Were Emerging Economies to the Global Crisis? The World Bank, *Policy Research Working Paper WPS5637*. Washington: The World Bank.

Djankov, S., McLiesh, C., and Shleifer, A. (2007). Private credit in 129 countries, *Journal of Financial Economics,* 84(2), 299-329.

Easterly, W., and Levine, R. (1997). Africa's growth tragedy: policies and ethnic divisions, *Quarterly Journal of Economics*, 112(4), 1203-1250.

Easterly, W. (1993). How much do distortions affect growth? *Journal of Monetary Economics*, 32(4), 187-212.

Edo, S. (2009).The behaviour of an emerging stock market in disequilibrium. In Adenikinju, A. and Olaniyan, O. (Ed), Applied Econometrics and Macroeconometrics Modelling in Nigeria, Ibadan University Press.

Eggoh, J. C. and Villieu, P. (2014). A simple endogenous growth model of financial intermediation with multiplicity and indeterminacy, *Economic Modelling*, 38, 357-366

Ehrlich I and Lui, F T. (1999). Bureaucratic corruption and endogenous economic growth. *Journal of Political Economy*, 107(6), 270-293.

Elbadawa, I. A. and Ndulu, B. (1994). Long-term development and sustainable growth in sub-Saharan Africa. Mimeo. AERC, Nairobi.

Epstein, G. and Heintz, J. (2006). Monetary policy and financial sector reform for employment creation and poverty reduction in Ghana, *PERI Working Paper No. 113*, March 2006

Eschenbach, F. (2004). Finance and growth: A survey of the theoretical and empirical literature, *Tinbergen Institute Discussion Paper, 39(2).*

Esso, L.J. (2010). Re-examining the finance-growth nexus: Structural break, threshold cointegration and causality evidence from the ECOWAS. *Journal of Economic Development*, 35(3): 57-79.

Fabayo J., Posu, S.M and Obisanya, A.A. (2011). Corruption and the investment climate in Nigeria, *Journal of Economics and Sustainable Development*, Vol.2, No.4.

Fink G. Haiss P., and Mantler H.C. (2005). The finance-growth-nexus: market economies vs. transition countries, *Europainstitut Working Paper 64*.

Fosu, A., Bates, R., and A. Hoeffler (2006). Institutions, governance and economic development in Africa: An overview. *Journal of African Economies*, 15(1), 1-9.

Fowowe, B. (2011). Financial sector reforms and private investment in sub-Saharan African countries, *Journal of Economic Development*, 36(3), 79

Fowowe B. (2014). Law and finance revisited: Evidence from African countries, *South African Journal of Economics*, 82(2), 193-208.

Fry, M.J, (1989). Financial development: Theories and recent experience'. Oxford Review of Economic Policy, Oxford University Press, 5(4), 13-28.

Fry, M. J. (1997). In favour of financial liberalisation. *Economic Journal,* 107, 754– 770.

Galbis, V. (1977). Financial intermediation and economic growth in less-developed countries: A theoretical approach. *Journal of Development Studies,* 13(2), 58-72.

Galindo, A., Micco, A., and Ordonez, G. (2002). Financial liberalisation and growth: Empirical evidence. IDB: Mimeo.

Galindo, A., Schiantarelli, F. and Weiss, A. (2007). Does financial liberalization improve the allocation of investment? Micro evidence from developing countries, *Journal of Development Economics*, 83, 562–587.

Galor, O., and Zeira, J. (1993). Income distribution and macroeconomics, *Review of Economic Studies*, 60(1), 35-52.

Gehringer, A. (2013). Financial liberalisation, growth, productivity and capital accumulation: The case of European integration. *International Review of Economics and Finance,* 25, 291-309.

Gelb, A.H., (1989). Financial Policies, Growth and Efficiency, *PRE Working Paper 202*, World Bank, Washington, DC.

Gelb, A.H., and Associates. (1988). Oil windfalls: Blessing of curse? Oxford University Press, New York.

Gelbard, E., and Leite, S.P. (1999). Measuring financial development in Sub-Saharan Africa, *IMF Working Papers 99/105*. Washington: International Monetary Fund.

Gibson, H.D., and Tsakalotos, E. (1994). The scope and limits of financial liberalisation in developing countries: A critical survey. *Journal of Development Studies,* 30(3), 578-628.

Goldsmith, R. W. (1969). Financial structure and development. New Haven, CT: Yale University Press, 1969.

Grammy, A.P. and Assane, D. (1996). New evidence on the effect of human capital on economic growth. *Applied Economic Letters*, 4, 121-124.

Gravin, M and Hausmann. R. (1998). Nature, development, and distribution in Latin America. Evidence on the role of geography, climate and natural resources. WP-378.

Green C.J., Kirkpatrick, C.H., and Murinde, V. (2006). Finance for small enterprise growth and poverty reduction in developing countries. *Journal of International Development*, 18, 1017-1030.

Green, J. and Villanueva D. (1991). Private investment in developing countries: An empirical analysis. *IMF Staff Paper, 38(1)*, International Monetary Fund, Washington, DC.

Greenwald, B. and Stiglitz, J. (1993), Financial market imperfections and business cycles, *Quarterly Journal of Economics,* 108: 77-114.

Greenwood, J. and Jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of Political Economy*, 98, 1076-1107.

Greenwood, J. and Smith, B. (1997). Financial market in development and the development of financial markets. *Journal of Economic Dynamics and Control.* 21, 145 – 181.

Grossman, S., and Stiglitz, J. (1980). Stockholder unanimity in making production and financial decisions. *Quarterly Journal of Economics,* 94 (3), 543–566

Guiso, L., Sapienza P., and Zingales, L. (2006). The cost of banking regulation. *NBER Working Paper No. 12501*. National Bureau of Economic Research, Cambridge, MA.

Guriev, S., Plekhanov, A. and Sonin, K. (2009). Development based on commodity revenues *Working Paper No.108*, European Bank for Reconstruction and Development.

Gulde, A, Catherine, P., and Christensen, J (2006), Sub-Saharan Africa: Financial sector challenges, International Monetary Fund, Washington, D.C.

Gurley, J.G., and Shaw, E.S. (1955). Financial aspect of economic development. *American Economic Review,* 45, 515-538.

Gylfason, T (2004). Natural resources and economic growth: From dependence to diversification, *CEPR Discussion Papers 4804.*

Gylfason, T., and Zoega, G. (2006). Natural resources and economic growth: The role of investment. *World Economy,* 29, 1091-1115.

Hadjimichael, M., and Ghura, D. (1995). Public policies and private savings and investment in Sub-Saharan Africa: An empirical investigation. *IMF Working Paper, WP/95/19.* Washington: International Monetary Fund.

Hamilton K. and Ruta, G. (2008). Wealth accounting, exhaustible resources and social welfare, *Environmental and Resource Economics,* 42 (1), 53-64.

Harris, R.D. (1997). Stock markets and development: A re-assessment. European Economic Review, 1:136-139.

Hartwick, J. (1977). Intergenerational Equity and the Investing of Rents from Exhaustible Resources, *American Economic Review,* 67, 972-974.

HDR, (2013). Human Development Report: The rise of the South: Human progress in a diverse world, UNDP, New York, USA.

Herwartz, H. and Walle Y. M. (2014). Determinants of the link between financial and economic development: Evidence from a functional coefficient model. *Economic Modelling,* 37, 417-427.

Hoeffler, A.E. (1997). The augmented Solow production model and the African growth debate. Oxford: Oxford University, Centre for study of African Economics.

Huang, Y. (2005). What determines financial development? *Bristol Economics Discussion Papers 05/580*, Department of Economics, University of Bristol, UK.

Huizinga, H.P. (2000). Comment on unemployment, growth and taxation in industrial countries. *Economic Policy,* 15(30), 92-94.

Hung, Fu-Sheng, (2003). Inflation, financial development, and economic growth, *International Review of Economics and Finance,* 12(1), 45-67.

Hussain, F., and Chakraborty, D.K. (2012). Causality between financial development and economic growth: Evidence from an Indian State. Romanian Economic Journal, 15(35), 27-48.

Hussain, N.H, Mohammed, N., and Kamier, E.M. (2002). Resource mobilization, financial liberalisation and investment: The case of some African countries. Retrieved from http://tailieu.vn/doc/resource-mobilization-financial-liberalization-and-investment-the-case-of-some-african-countries-103262.html

Ikhide, S. I. and Alawode, A.A. (1993). Impact of stabilisation programmes on the growth of the money market in Nigeria, *The Developing Economies*, 31(2).

Ikhide, S. and A. Alawode (2001). Financial sector reforms, macroeconomic instability and the order of economic liberalization: Evidence from Nigeria. AERC., Nairobi, Nov 2001.

Im, K.S., Pesaran, M. H., and Shin, Y. (2003). Testing for Unit Roots in Heterogeneous Panels. *Journal of Econometrics*, 115, 53–74.

IMF., (2006). Republic of Madagascar: Financial system stability assessment. Washington: International Monetary Fund. *Retrieved:www.worldbank.org/ifa/rosc_aml_mdg.pdf*

IMF., (2007). Reaping the benefits of financial globalization. (Washington: International Monetary Fund). *Retrieved http://www.imf.org/external/np/res/docs/2007/0607.htm*

IMF, (2008). Structural reforms and economic performance in advanced and developing countries, IMF Research Department, Washington DC.

IMF., (2013). Financial deepening for macroeconomic stability and sustained growth, Washington: IMF. Retrieved: http://www.imf.org/external/np/res/dfidimf/topic5.htm

Imran, K and Khalil, S. (2012). Contribution of financial development in poverty reduction through industrial growth, *International Journal of Asian Social Science*, 2(5), 567-576.

Intartaglia, M., (2014). Absolute poverty, relative poverty and financial development Available at SSRN: http://ssrn.com/abstract=2500712

Islam, N. (1995). Growth empirics: A panel data approach. *Quarterly Journal of Economics* 110(4), 1127-1170.

Iyoha, M.A (1992). Oil dependency and the Nigeria's development problematique: Strategies for rapid socio - economic transformation by the year 2000. A lecture delivered at the civil service forum, organised by the Edo State Government at Urhokpota hall, Kings Square, Benin City on September 25.

Iyoha, M.A (2004). Macroeconomics: Theory and policy, Mindex Publishing, Benin City.

Iyoha, M.A., and Oriakhi, D.E. (2002). Explaining African economic performance: A case of Nigeria. Revised interim report on Nigerian case study prepared for AERC, May 2002.

Jacobs, G., and Šlaus, I. (2010). Indicators of economics progress: The power of measurement and human welfare. *CADMUS*, 1(1), 53-113.

Jaffee, D. and Russell, T. (1976). Imperfect information, uncertainty and credit rationing, *Quarterly Journal of Economics*, 90(4): 651-666.

Jalil, A., Wahid, Abu N. M. and Shahbaz, M., (2010). Financial development and growth: A positive, monotonic relationship? Empirical evidences from South Africa. *MPRA_paper_27668.*

Jalilian, H. and Kirkpatrick, C. (2007). Does financial development contribution to poverty reduction? *Journal of Development Studies*, 41(4), 636-656.

Jappeli, T. and Pagano, M (1996). The determinants of saving: Lesson from Italy. Proceedings of the conference on determinants of domestic savings in Latin America, June 15-17, 1996, Inter-American development bank, Santafede Bogota.

Japelli, T. and Pagano, M. (1994). Saving, growth, and liquidity constraints. *Quarterly Journal of Economics*, 108, 83-109

Jeanneney, S.G. and Kpodar, K. (2005). Financial development, financial instability and poverty. *Working Paper, CSAE WPS/2005-09,* University of Auvergne, Clermont-Ferrand.

Johansen, S. (1988). Statistical analysis of cointegration vectors. *Journal of economic dynamics and control*, *12*(2), 231-254.

Jung, W.S. (1986). Financial development and economic growth: International Evidence. *Economic Development and Cultural Change*, 34 (2), 333-346.

Kablan, S (2010) Banking efficiency and financial development in sub-Saharan Africa, *IMF Working Paper WP/10/136.* Washington: International Monetary Fund.

Kaminsky, G., and Schmukler, S.L. (2001). On booms and crashes: Financial liberalization and stock market cycles. The World Bank Mimeo.

Kaminsky, G., and Schmukler, S.L. (2002). Short-term pain, long-run gain: the effects of financial liberalization. *World Bank Working Paper 2912*. The World Bank. Washington D.C.

Kao, C. (1999). Spurious regressions and residual-based tests for cointegration in panel data. *Journal of Econometrics,* 90, 1-44.

Kar, M. and Pentecost, E.J (2000). Financial development and economic growth in Turkey: Further evidence on the causality issue, *Economic Research Paper No.00/27,* University of Loughborough.

Katircioglu S.T., and Naraliyeva, A. (2006). Foreign direct investment, domestic saving and economic growth in Kazakhstan: Evidence from cointegration and causality tests. *Investment Management and Financial Innovations*, 3(2), 34-45.

Keeton, W. (1979). Equilibrium credit rationing. New York: Garland Press.

Khan, M.S. and Senhadji, A.S. (2003). Financial development and economic growth: A review and new evidence, *Journal of African Economics*, 12(2), 89 – 110

Fosu, A., Bates, R., and A. Hoeffler (2006). Institutions, governance and economic development in Africa: An overview. *Journal of African Economies,* 15(1), 1-9.

King, R.G. and Levine, R. (1993a), Finance, entrepreneurship, and growth: Theory and evidence, *Journal Monetary Economics*, 32(3), 513-42.

King, R.G. and R. Levine (1993b), Financial and growth: Schumpeter might be right. *The Quarterly Journal of Monetary Economics,* XXXII: 513-42

Kitchen, R.L. (1986). Finance for the developing countries. New York: Wiley.

Kohsaka, A (1984). The high interest rate policy under financial repression. *Developing Economics*, 22 (4).

Koivu, T., (2002). Do efficient banking sectors accelerate economic growth in transition countries, *BOFIT Discussion Papers 14/2002,* Bank of Finland, Institute for Economies in Transition.

Kose, M.A., Prasad, E.S., and Terrones, M.E. (2003). Financial integration and macroeconomic volatility. *IMF Working Paper WP/03/50*. Washington, DC: International Monetary Fund.

Kose, M.A., Prasad, E.S., Rogoff, K., and Wei, S. (2006). Financial globalisation: A reappraisal. *IMF Working Paper WP/06/189.* Washington, DC: International Monetary Fund.

Kurronen, S. (2012). Financial Sector in resource-dependent economies, *BOFIT Discussion Papers 6.2012.* Bank of Finland, Institute for Economies in Transition.

Kuznets, S., (1955). Economic growth and income inequality. *American Economic Review* 45, 1-28.

Kuznets, S.,(1963). Quantitative aspects of the economic growth of nations. *Economic Development and Cultural Change*, 11(1), 1–80.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1997). Legal determinants of external finance, *Journal of Finance*, 52, 1131–1150.

La Porta, R., Lopez-de-Silanes, F. Shleifer, A. and Vishny, R. (1998). Law and finance, *Journal of Political Economy,* 106, 1113–155.

La Porta, R., Lopez de Silanes, F., and Shleifer, A. (2002). Government ownership of banks. *Journal of Finance*, 57(1), 265–301.

Laeven, L., and Valencia, F. (2010). Resolution of banking crises: The good, the bad, and the ugly, *IMF Working Paper № 10/146.* Washington: International Monetary Fund.

Laumas, P. S. (1990). Monetization, financial liberalization, and economic development, *Economic Development and Cultural Change,* 38(2), 377-390.

Lensink, R.,Hermes, N., and Murinde, V. (1998). The effect of financial liberalisation on capital flight in African economies. *World Development,* 26(7), 1349-1368.

Levin, A., Lin, C. and Chu, C. (2002). Unit root tests in panel data: Asymptotic and Finite sample properties. *Journal of Econometrics,* 108, 1–24.

Levine, R (1991). Stock markets, growth, and tax policy, *Journal of Finance,* 46(4), 1445-65.

Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature*, 35(2), 688-726

Levine, R (2005). Finance and growth: Theory and evidence in Aghion, P and S.N. Durlauf. (eds.), Handbook of Economic Growth, London: Elsevier 1A, 865-934.

Levine, R,, Loayza, N. and Beck, T. (2000). Financial intermediation and growth: causality and causes. *Journal of Monetary Economics*, 46(1), 31–77.

Levine, R. and Zervos, S. (1996). Stock market development and long-run growth. *World Bank Economic Review,* 10(2), 323-339.

Levine R. and Zervos S. (1998). Stock markets, banks and economic growth, *American Economic Review,* 88(3), 537 – 558.

Lewis,W. (1955). The theory of economic growth. George Allen and Unwin, London.

Lewis, S.R. (1989). Primary exporting countries in Hollis Chenery and T.N. Srinivasen (eds). Handbook of Development Economics, Volume II. Amsterdam: North Holland.

Lin, J.Y., Sun, X., and Jiang, Y. (2009). Towards a theory of optimal financial structure. *World Bank Policy Research Working Paper* 5038.

Loayza, N., Schmidt-Hebbel, K., and Serven, L. (2000). What drives savings across the world? Review of Economics and Statistics, 82(2), 165-181.

Lucas, R.E. (1988). On mechanics of economic development, *Journal of Monetary Economics,* 22(1), 3-42.

Lugo, M.O (2001). Investigating the differential impact of real interest rates and credit availability on private investment: Evidence from Venezuela. Texas A&M University, Ph D Dissertation.

Luintel, K and Khan, M. (1999). A quantitative reassessment of the finance-growth nexus: Evidence from a multivariate VAR, *Journal of Development Economics,* 60, 381-405.

Mankiw, G., Romer, D., and Weil, D. (1992) A contribution to the empirics of economic growth. *Quarterly Journal of Economics,* 107, 407-437

Masson, P.R., Bayoumi, T., and Samiei, H.(1998).International evidence on the determinants of private saving. *World Bank Economic Review,* 12(3), 483-501.

Mattesini, F. (1996). Interest rate spreads and endogenous growth. *Economic Notes,* 25(1), 111-129.

Mathieson, D.J. (1980). Financial reform and stabilisation policy in a developing economy. *Journal of Development Economics,* 7(3), 359-395.

Mauro, P. (1995). Corruption and growth. *Quarterly Journal of Economics,* 110(3), 681-712.

Mauro, P. (1998). Corruption and the composition of government expenditure. *Journal of Public Economics,* 69(2), 263-279.

Mbanefoh, J.F. (1980). Sharing costs and benefits of university education in Nigeria: A suggested approach. *The Nigerian Journal of Economics & Social Studies*, 22(1),67-84.

McDonald, C., and Schumacher, L. (2007). Financial deepening in sub-Saharan Africa: Empirical evidence on the role of creditor rights protection and information sharing. *IMF Working Papers WP/07/203*. Washington: International Monetary Fund.

Mckinnon, R.I. (1973). Money and capital in economic development. The Brookings Institution, Washington, DC.

McKinnon, R.I. and Mathieson , O. (1981). How to manage a repressed economy, Princeton Essays in International Finance, No.145.

Mehrara, M. and A. Rezaza 2011. Oil revenues, economic growth and resource curse in Iran economy, *Journal of Social and Development Sciences*, 2(2), 73-80

Michalopoulos, S., Laeven, L. and Levine, R., (2009). Financial innovation and endogenous growth, *NBER Working Paper Series 15356.* National Bureau of Economic Research, Cambridge, MA.

Mlachila,M., and Chirwa, E.W. (2002). Financial reforms and interest rate spread in the commercial banking system in Malawi. *IMF Working Paper WP/02/6.* Washington: International Monetary Fund.

Mlachila, M., Dykes, D., Zajc, S., Aithnard, P., Beck, T., Ncube, M., and Nelvin, O. (2013). Banking in sub-Saharan Africa: Challenges and Opportunities. A paper discussed at a roundtable event hosted by the European Investment Bank, EIB's Economics Department in Luxembourg on January 23rd, 2013.

Montiel, P.J. (1994). Financial policies and economic growth: Theory, evidence and country-specific experience from Sub-Saharan Africa. Paper presented at AERC Plenary session.

Murinde, V (2006). Capital markets: Roles and challenges, A paper prepared for the international conference on accelerating Africa's development five (5) years into the 21st Century, held in Tunis on Nov. 22-24, 2006 under the joint organization of the ADB and the AERC.

Murinde, V., and Eng, F.S.H. (1994). Financial development and economic growth in Singapore: Demand- following and supply-leading? *Applied Financial Economics*, 4(6), 391-404

Mwega F. M., N. Mwangi and S.M. Ngola. (1990). Real interest rates and the mobilization of private savings in Africa: A Case Study of Kenya. AERC Research Paper 2.

Mwaura M., R. Ngugi and G. Njenga G. (2009). Financial sector development and economic growth for African countries, *KIPP1RA Discussion Paper No. 99.*

Ndikumana, L., (2000). Financial determinants of domestic investment in Sub-Saharan Africa: Evidence from panel data, *World Development, Elsevier*, 28(2), 381-400.

Ndulu, B.J., A. Stephen, O'Connell, R H. Bates, P. Collier, and C.C. Soludo (2000), The political economy of economic growth in Africa, 1960–2000, Cambridge University Press, Cambridge, UK.

Ndungu, N.S., and Ngugi, R.W. (2000). Banking sector interest rate spread in Kenya. *Discussion Paper series DP 05/2000*. KIPPRA.

Newlyn, W. T., and Avramides, U. (1977). The financing of economic development. Oxford: Clarendon Press.

Ngugi, R.W., Murinde, V. and Green, C.J. (2005). Stock market development: What have we learned? in C. J. Green, C. H. Kirkpatrick and V. Murinde (eds.), Finance and development: Surveys of theory, Evidence and Policy, Cheltenham: Edward Elgar.

Ngugi, W.N., Murinde, V. and Green, C.J (2001). How have the emerging stock exchange in Africa Responded to market reforms?. A paper presented at the conference on Business and Development Finance at the University of Manchester, 5-6 April 2001.

Nissanke, M., and Aryeetey, E. (1998). Financial integration and development in Sub-Saharan Africa. London : Routledge.

Nurkse, R., (1953). Problems of capital formation in underdeveloped countries. Oxford University Press, New York.

Obadan, M.I. (1998). Presidential Address presented on the Capital Market and Nigeria's Economic Development at one day seminar organized by the Nigeria Economic Society at the Institute of International Affairs, Lagos on 21st January.

Obadan, M.I. (2006). Globalisation of finance and the challenge of national financial sector development, in Adenikinju, A. and Olaniyan, O. (Ed.). Applied Macroeconomics and Economic Development, Ibadan University Press, Ibadan.

Obamuyi T. M. and S. Olorunfemi (2011). Financial reforms, interest rate behaviour and economic growth in Nigeria, *Journal of Applied Finance and Banking*, 1(4), 39-55

Obstfeld, M. (1994). Risk-taking, global diversification, and growth, *American Economic Review*, 84, 1310-1329.

Obstfeld, M. (1998). The global capital market: Benefactor of menace? *Journal of Economic Perspectives*, 12(4), 9-30.

Obstfeld, M (2009). International finance and growth in developing countries: What have we learned? *IMF Staff Papers*, 56(1), 63-111.

Odedokun, M.O. (1996). Alternative econometric approaches for analyzing the role of the financial sector in economic growth: Time-series evidence from LDCs. Journal *of Development Economics*, 50, 119 -146.

Odhiambo, N.M. (2004). Is financial development still a spur to economic growth? A causal evidence from South Africa. *Savings and Development*, 28, 47-62.

Odhiambo, N.M., (2005). Financial development and economic growth in Tanzania: A dynamic causality test. *African Finance Journal*, 1, 7.

Odhiambo, N.M. (2008). Financial depth, savings and economic growth in Kenya: A dynamic causal linkage, *Economic Modelling*, 25(4), 704-713.

Odhiambo, N.M. (2009). Finance-growth-poverty nexus in South Africa: a dynamic causality linkage. *The Journal of Socio-Economics*, 38(2), 320-325.

Odhiambo, N., (2009). Saving and economic growth in South Africa: A multivariate causality test, *Journal of Policy Modelling*, 31(5), 708-718.

Odhiambo, N.M. (2010a). Are banks and stock market positively related? Empirical evidence from South Africa. *Journal of Applied Business Research*, 26(6), 17-26.

Odhiambo, N.M. (2010b). Financial deepening and poverty reduction in Zambia: An empirical investigation. *International Journal of Social Economics*, 37(1), 41-53.

Ogbokor, C.A. (2004). Impacts of inflation on Namibian growth: An empirical study. *Journal of Applied Sciences*, 4(4), 644-648.

Okojie, C.E.E. (1995). Human capital formation for productivity growth in Nigeria. *The Nigerian Economic and Financial Review* 3, 71-102.

Olofin, S.O and Afangideh, U.J. (2009). Financial structure and economic growth in Nigeria: A macroeconometric approach, Centre for Econometric and Allied Research (CEAR), University of Ibadan, Ibadan.

Oshikoya, T. (1994). Macroeconomic determinants of domestic private investment in Africa: An empirical analysis, *Economic Development and Cultural Change*, 42, 573–596.

Oyaromade, R. (2005). Financial sector reforms and financial savings in Nigeria. Selected papers from the Nigerian Economic Society Conference, The Nigerian Journal of Economic and Social Studies...

Oyefusi, A. (2007). Oil-dependence and civil conflict in Nigeria, *Working Paper No. 268*. Oxford University, Centre for Study of African Economics.

Oyejide, A. (2000). Markets and economic growth in Africa. Framework paper for AERC Collaborative Research Project, Explaining Africa's Growth Performance.

Pagano, M (1993). Financial markets and growth: An overview. *European Economic Review*, 37, 613-22.

Papademos, L., and Modigliani, F. (1990). The supply of money and the control of nominal income In Friedman, B.M., and Hahn, F.H., eds., Handbook of Monetary Economics, Handbooks in Economics 8. Amsterdam: Holland.

Patrick, H.T. (1966). Financial development and economic growth in underdeveloped countries, *Economic Development and Cultural Change*, 14, 174-189.

Perkins, D.H., Radelet, S., and Lindauer, D.L. (2006). Economics of development, W.W. Norton and Company Ltd., London.

Pereira, A (2000). Is all public capital created equal? *Review of Economics and Statistics*, 82 (3), 513–518.

Pill, H., and Pradhan, M. (1997). Financial liberalization in Africa and Asia. *Finance and Development*, 34(2), 7-10.

Pinto, B. (1987). Nigeria during and after the oil boom, A policy comparism with Indonesia, A World Bank Economic Review, Vol 1, No 3.

Ploeg, F., and Poelhekke, S. (2009). Volatility and the natural resource curse, *Oxford Economic Papers*, 61(4), 727-760.

Ploeg, F., and Venables, A. J. (2011). Natural resource wealth: The challenge of managing a windfall. Oxford: University of Oxford Press.

Prasad, E.S., Rogoff, K., Wei, S.J., and Kose, M.A. (2004). Financial globalisation, growth and volatility in developing countries. *NBER Working Paper No. W10942*. National Bureau of Economic Research, Cambridge, MA.

Pritchett, L (2001). Where has all the education gone? The World Economic Review 15(3)…

Podrecca, E., and Carmeci, G., (2001). Fixed investment and economic growth. New results on causality. *Applied Economics.* 33, 177-182.

Ramirez, M (2000). The impact of public investment on private investment spending in Latin America: 1980–1995, *Atlantic Economic Journal*, 28(2), 210–225.

Rajan, R.G., and Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88(3), 559-586.

Rajan, R.G., and Zingales, L. (2003). The great reversals: The politics of financial development in the twentieth century, *Journal of Financial Economics*, 69, 5–50.

Ray, S. (2015). Investment finance and financial sector development. *Asian Development Bank Institute Working Paper 522*. Available at: http://www.adbi.org/workingpaper/2015/04/13/6593.investment.finance.sector.de

Rehman H and Naveed, A. (2007). Determinants of corruption and its relation to GDP: A panel study. *Journal of Political Studies*, XII, 27-59.

Rambaldi, A. N., Hall, G., and Brown, R.P.C. (2006). Re-testing the resource curse hypothesis using panel data and an improved measure of resource intensity. Paper prepared for presentation at the International Association of Agricultural Economists Conference, Gold Coast, Australia, August 12-18, 2006.

Reinhart, C., and Rogoff, K., (2009). This time is different: Eight centuries of financial folly, Princeton University Press.

Pernia, E. M., and Quising, P. F. (2003). Economic openness and regional development in the Philippines. *ERD Working Paper, No.34*…

Rioja, F. and N. Valev, (2004). Finance and the sources of growth at various stages of economic development. *Economic Inquiry*, 42(1), 127-140.

Roubini, N. and X. Sala-i-Martin, (1992). Financial repression and economic growth, *Journal of Development Economics*, 39, 5 – 30.

Robinson, J. (1952). The generalisation of the general theory: The rate of interest and other essays. London: Macmillan.

Romer, P. M. (1986). Increasing returns and long-run growth, *Journal of Political Economy*, 94(5), 1002-1037.

Romer, P.M. (1989). Capital accumulation in the theory of long run growth. In Modern Macroeconomics (ed. R Barro), Cambridge, Mass: Harvard University Press.

Romer, P.M. (1990). Endogeneous technical change. *Journal of Political Economy*, 98(2), 71-102.

Ross, M.L (2004). Mineral wealth and equitable development. A background report for the world development report 2006.

Rostow, W. (1961). The stages of economic growth: A non-communist manifesto. Cambridge University Press. Cambridge

Rousseau, P.L. and Wachtel, P. (1998). Financial intermediation and economic performance: Historical evidence from five industrialized countries. *Journal of Money, Credit and Banking*, 30(4), 657-678.

Sachs, J.D. and Warner, A.M. (1995). Natural resource abundance and economic growth. National Bureau of Economic Research Working Paper, no. 5398, December.

Sachs, J.D. and Warner, A.M. (1997). Fundamental sources of long-run growth. American Economic Review, 87(2), 184–184.

Sachs, J.D. and Warner, A.M. (1999). The big push, natural resource booms and growth, Journal of Development Economics. 59, 43–76.

Sala-i-Martin, X., and Subramanian, A. (2003). Addressing the natural resource curse: An illustration from Nigeria. *NBER Working Papers 9804.* National Bureau of Economic Research, Cambridge, MA.

Saltz, I. S. (1999). An examination of the causal relationship between savings and growth in the third world. *Journal of Economics and Finance*, 23, 90-98

Samuel, C. (1996). The stock market and investment: The governance role of the market. Policy Research Working Paper No. 1578, World Bank.

Sauve, P. (1999). The benefits of trade and investment liberalisation: Financial services. In D.H. Brooks and M. Queisser (Eds.), Financial liberalisation in Asia: Analysis and prospects. Paris: OECD.

Schultz, T.W. (1961) Investment in human capital. American Economic Review March p1-17

Schumpeter, J. (1911). The theory of economic development: An inquiry into profits, capital, credit, interest and the business cycle. Cambridge: Harvard University Press.

Seck, D. and El Nil, Y.H. (1993). Financial liberalization in Africa, *World Development*, 21(11), 1867-1881.

Senbet, L.W. and Otchere I. (2005). Financial sector reforms in Africa: Perspectives on issues and policies. Paper prepared for the annual World Bank conference on development economics (AWBCDE), Dakar.

Serhan C., and Mohammad, R., (2013). Searching for the finance-growth nexus in Libya, *IMF Working Paper WP 13/92.* Washington: International Monetary Fund.

Shan, J., Morris, A., and Sun, F. (2001). Financial development and economic growth: An Egg-and chicken problem? *Review of International Economics.* 9(3), 443-454.

Shaw, E.S. (1973), Financial Deepening in Economic Development. New York: Oxford University Press.

Shera A. (2011). Corruption and the impact on the economic development. *Journal of Technology and Economic Development,* 2(1), 39 – 53.

Sikorski, T.M. (1996). Financial liberalisation in developing countries. Cheltenhan, Edward Elgar.

Singh, A. (1997). Financial liberalisation, stock markets and economic development. The *Economic Journal,* 107, 771–782.

Sinha, D., (2000). Tests of granger causality between savings and economic growth in the Philippines. *Journal of Social Economic Development*. 3, 200-207.

Solow, R. (1956). A contribution to the theory of economic growth, *Quarterly Journal of Economics*, 70, 65-94.

Sowa, N.K. (2002). Financial sector reform policies, poverty reduction and macroeconomic management in Africa in Dar Es Salaam, Tanzania, being the 5th AERC Senior Policy Seminar Co-sponsored with the Bank of Tanzania, February 12-14, 2002.

Soyibo, A. (1994). Financial liberalisation and bank restructuring in SSA: Some lessons for sequencing and policy design. Presented at the plenary session of the workshop of the AERC, Nairobi, December 4-9.

Stevens, P. (2003). Resource impact: Curse or Blessing? A literature survey. *Journal of Energy Literature,* 9, 3-41.

Stiglitz, J.E. (1994). The role of the state in financial markets, Proceedings of the World Bank Annual Conference on Development Economics. The World Bank.

Stiglitz, J.E. (2000). Capital market liberalization, economic growth, and instability. *World Development*, 28(6), 1075–86.

Stiglitz, J., Sen, A. and Fitossi, J. (2009). The measurement of economic performance and social progress revisited, Paris: OFCE.

Stiglitz, J. E., and Weiss. A. M. (1981). Credit rationing in markets with perfect information. *American Economic Review*, 71(3), 393–410.

Stigler, G. (1971). The theory of economic regulation. *Bell Journal of Economics and Management Science,* 2, 3-21.

Stulz, R.M. (1999). Globalisation, corporate finance and the cost of capital. *Journal of Applied Corporate Finance,* 12(3), 8-25.

Sunde T., (2012). Financial sector development and economic growth in Namibia, Journal *of Emerging Trends in Economics and Management Sciences*, 1(2), 76-80

Svaleryd, H., and Vlachos, J. (2005). Financial markets, the pattern of industrial specialization and comparative advantage: Evidence from OECD countries. *European Economic Review*, 49(1), 113-144

Tadesse, S (2002). Financial architecture and economic performance: International evidence, *Journal of Financial Intermediation*, 11(4), 429-454.

Tobin, J (1965). Money and Economic Growth, *Econometrica*, 33(4), 671-84.

Todaro, M.P. and Smith, S.C. (2011). Economic development 11th Edition. Pearson Education, New York.

Tornell, A. and Lane, P. (1999). The voracity effect. *American Economic Review*, 89 (1), 22-46.

Tressel, T. and Detragiache, E. (2008). Do financial sector reforms lead to financial development? Evidence from a new dataset, *IMF Working Paper WP/08/265*. Washington: International Monetary Fund.

Ugur, M. and Dasgupta, N. (2011). Evidence on the economic growth impacts of corruption in low-income countries and beyond: A systematic review. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

UNDP (2003). Human Development Report and Millennium Development Goals: A compact among Nations to end human poverty, Oxford University Press, New York.

United Nations (2013). The Millennium Development Goals Report 2013, 1 July 2013, Available at: https://www.unfpa.org/public/global/ publications/pid/6090

Waheed, A. (2009). Financial sector reforms and economic growth: A time series data analysis for Pakistan. Institute of Developing Economies, Japan External Trade Organization.

Waqabaca, C., (2004). Financial development and economic growth in Fiji. *Working Papers (3)*. Economics Department, Reserve Bank of Fiji,

Warman, F., and Thirlwall, A.P. (1994). Interest rates, savings, investment and growth in Mexico 1960-90: Test of the Financial Liberalisation Hypothesis, *Journal of Development Studies*, 81(4), 639-651.

Wijnbergen, S. V. (1984). Inflation, unemployment and the Dutch disease in oil-exporting countries: A short-run disequilibrium analysis, *Quarterly Journal of Economics*, 99.

World Bank (1988). Sub-Saharan Africa: From crisis to sustainable development, The World Bank Washington, DC.

World Bank, (1993). The East Asian miracle: Economic growth and public policy. Policy Research Report.

World Bank, (1994). Adjustment in Africa: Reforms, results and the road ahead. Oxford: Oxford University Press.

World Bank (1995). Workers in an integrating world. World Development Report, Washington D.C.: Oxford University Press.

Xu, Z. (2000). Financial development, investment and economic growth. *Economic Inquiry* 38(2), 331-344.

Wu, S., Tang, J., and Lin, E.S. (2010). The impact of government expenditure on economic growth: How sensitive to the level of development? Journal of Policy Modelling, 32(6), 804-817.

Yıldırım, S., Özdemir, B. K., and Doğan, B. (2013). Financial development and economic growth nexus in emerging European economies: New evidence from asymmetric causality. International Journal of Economics and Financial Issues, 3(3), 710-722.

Zhuang, J., Gunatilake, H., Niimi, Y., Khan, M.E., Jiang, Y., Hasan, R., Khor, N., Lagman-Martin, A.S., Bracey, P., and Huang, B. (2009). Financial sector development, economic growth and poverty reduction: A literature review, Asian Development Bank (ADB) Economics Working Paper Series No. 173, October 2009.

APPENDIX

APPENDIX 1:

Appendix 1(a) Table 1: Selected Macroeconomic Indices for SSA and World

Year	World			Sub-Saharan Africa		
	GDP (constant prices)	Investment	Gross national savings	GDP (constant prices)	Investment	Gross national savings
	Percent change	Percent of GDP	Percent of GDP	Percent change	Percent of GDP	Percent of GDP
2000	4.759	22.51	22.317	3.571	17.676	18.511
2001	2.35	21.585	21.265	4.954	18.592	17.117
2002	2.874	21.035	20.607	7.15	19.849	16.11
2003	3.69	21.236	20.903	4.836	19.531	16.692
2004	4.874	22.094	22.07	7.077	19.779	18.09
2005	4.556	22.453	22.65	6.215	19.443	19.443
2006	5.254	23.198	24.012	6.406	20.615	24.762
2007	5.412	23.781	24.321	7.119	21.911	23.38
2008	2.801	23.846	24.184	5.587	21.981	21.939
2009	-0.574	21.699	21.799	2.796	22.432	19.335
2010	5.137	22.743	23.087	5.341	21.366	20.156
2011	3.833	23.443	23.867	5.147	21.051	19.217
2012	3.278	23.863	24.046	4.994	21.968	18.77
Average	**3.7111**	**22.5758**	**22.7022**	**5.4764**	**20.4765**	**19.5017**

Source: International Monetary Fund, World Economic Outlook Database, October 2012

Financial Development and Economic Growth Nexus

Appendix 1(b) Table 2: Studies that Support the Supply-Leading Hypothesis

S/N	Authors	Methodology	Findings
1	Jung (1986)	Cross-sectional data	Finance leads to growth in developing economies
2	King and Levine (1993a)	Cross-sectional data and OLS	Finance spur growth
3	De Gregorio and Guidotti (1995)	Panel data analysis	FD puts growth on a higher trajectory but that poor regulation in financial markets could stand between FD and growth.
4	Rajan and Zingale (1998)	Panel data fixed effect and OLS	Finance leads to firms expansion, and hence growth.
5	Xu (2000)	Multivariate VAR model	Finance leads to growth through investment
6	Odhiambo (2002)	Cointegration and ECM	Finance leads to growth through investment
7	Suleiman and Abu-Quan (2005)	Trivariate VAR framework	Finance leads to growth through investment
8	Odhiambo (2009c)	Time series; financial deepening model and Dynamic granger causality model	Finance leads to growth in Kenya but a relatively weak bi-directional relationship was also observed.

Appendix 1(c) Table 3: Studies that Support the Demand-Following Hypothesis

S/N	Authors	Methodology	Findings
1	Jung (1986)	Cross-section data	Economic growth leads to finance in developed countries.
2	Agbetsiafa (2004)	Time series; VECM	Growth causes financial development in Kenya & Coat d'Ivoire
3	Waqabaca, (2004)	Time series; Bivariate autoregressive framework	Growth precedes financial development
4	Odhiambo (2004)	Time series; Bivariate causality test based on ECM	Growth leads to Financial development in Kenya and South Africa.
5	Ang and Mckibbin (2007)	Time series; VECM, Cointegration, granger causality and PCA	Economic growth leads to financial development in the long run.
6	Odhiambo (2008a)	Time series; Cointegration and ECM	Growth precedes financial development
7	Odhiambo (2008b)	Time series; Trivariate causality test based on ECM	Growth leads finance
8	Odhiambo (2009)	Time series; Trivariate causality test based on ECM	Unidirectional causality from growth to finance

Appendix 1(d) Table 4: Studies on Bi-Directional Relationship Between Finance and Economic Growth

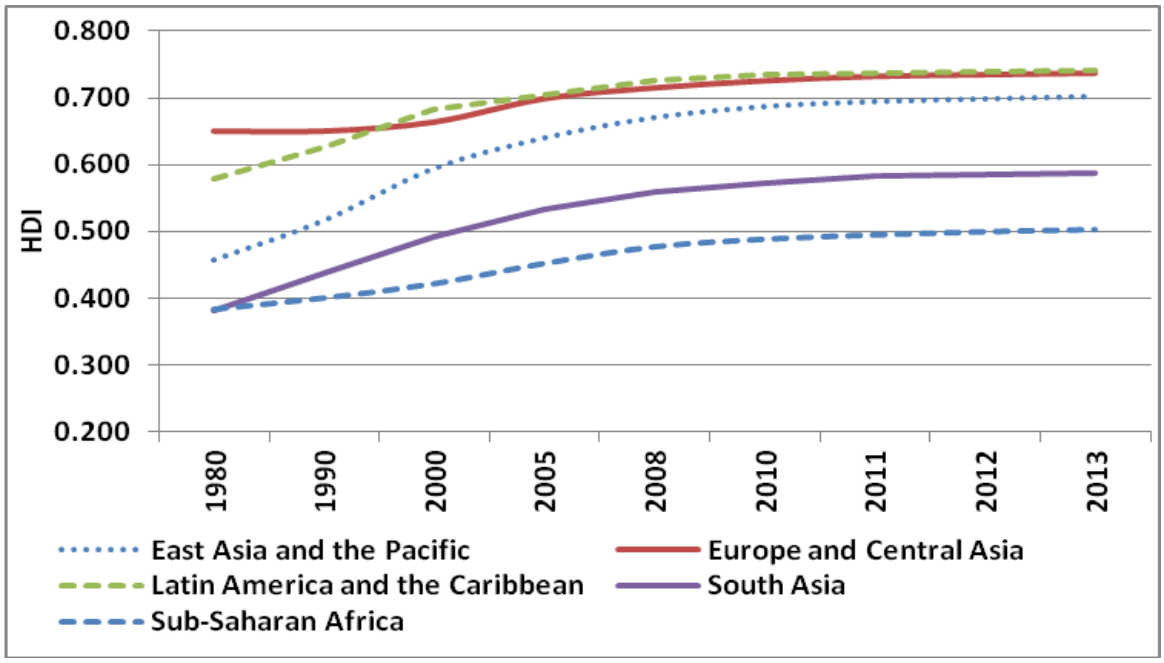
S/N	Authors	Methodology	Findings
I	Luintel and Khan (1999)	Time series; Multivariate VAR framework, VECM	Bi-directional causality between finance and growth
2	Demetrades and Hussein (1996)	Time series; VAR, VECM, Engle-Granger/Johansen cointegration &Granger causality	Bi-directional causality between finance and growth
3	Akinboade (1998)	Time series	Bi-directional causality between finance and growth
4	Calderon and Liu (2003)	Panel data analysis; VAR, Geweke decomposition and Granger causality models	Bi-directional causality between finance and growth.Finance effect on growth is higher in developing countries than developed ones
5	Odhiambo (2005)	Time series; Bi-variate causality test based on ECM	Bi-directional causality between finance and growth in Tanzania
6	Akinlo and Egbetunde (2010)	Time series; Multivariate cointegration analysis and ECM	Bi-directional causality in Kenya, Chad, South Africa, Sierra Leone and Swaziland. Finance found to precede growth in Central Africa Republic, Congo, Gabon and Nigeria, while demand following hypothesis was found for Zambia

Financial Reform, Financial Development and Poverty

Appendix 1(f) Table 5: Studies that Show Causality from Finance to Poverty

S/N	Authors	Methodology	Findings
1	Jeanneney & Kpodar (2005)	Panel data; OLS, Dynamic Panel GMM	Causality from finance to poverty reduction
2	Jalilian & KirkPatrick (2007)	Pooled panel data	Causality from finance to poverty reduction up to a certain level of economic development
3	Green et al. (2006)	Pooled panel data	Causality from finance to poverty reduction
4	Odhiambo (2009, 2010)	Time series; Trivariate granger causality based on the ECM and ARDL	Causality from finance to poverty reduction in Kenya and South Africa.
5	Imran & Khalil (2012)	Time series; cointegration, ECM	Causality from finance to poverty reduction.
6	Kar 2010	Time series; Trivariate granger causality based on ECM	Bi-directional causality between finance and poverty. Causality from finance to poverty is weak on the short run.
7	Uddin et. al. (2012)	Time series; ARDL bounds testing approach	Bi-directional causality between finance and poverty.

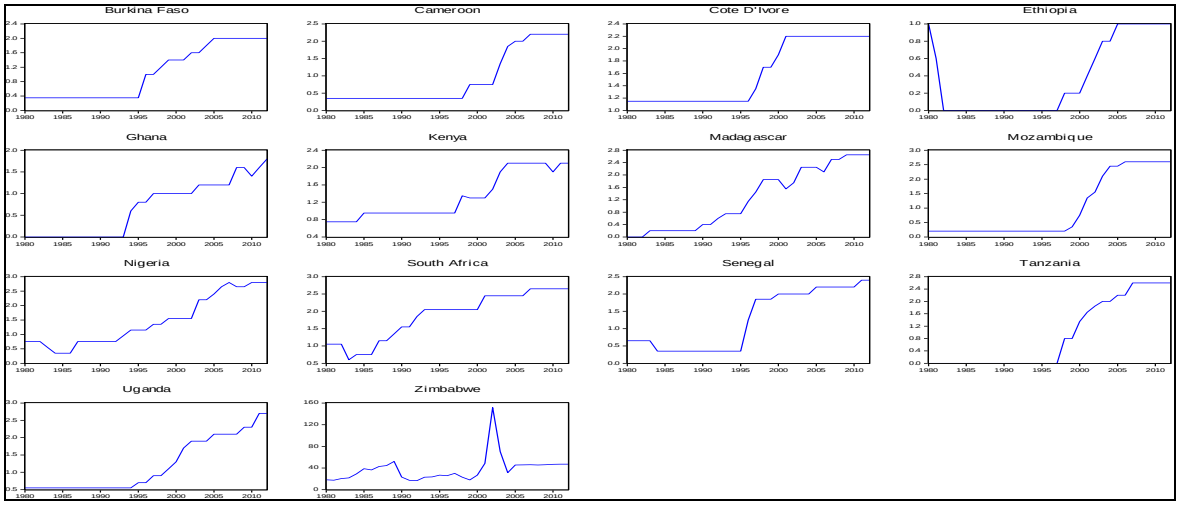
Appendix 1(g) Human Development Indicator: SSA and Other Global Regions.



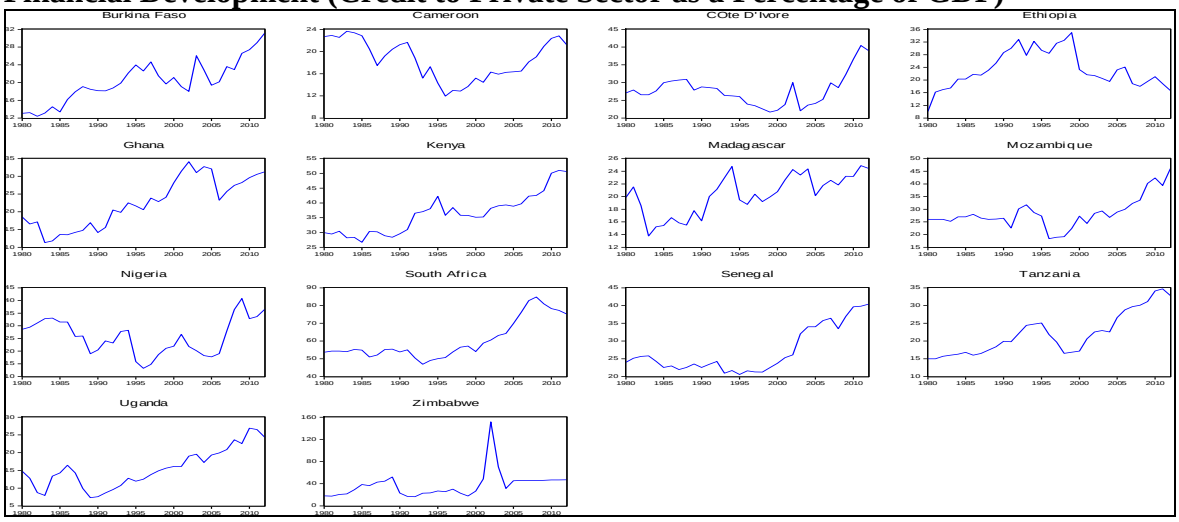
Source: Graphed by the Author but underlying data from the HDR (2013).

Appendix 1(h): Trend Analysis of Key Variables Used in the Study

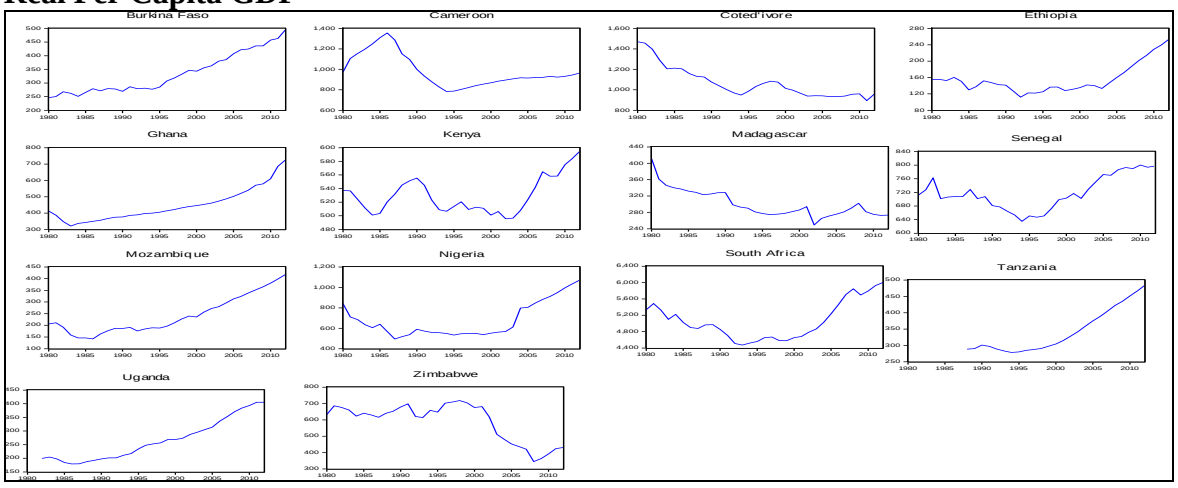
Financial Reform



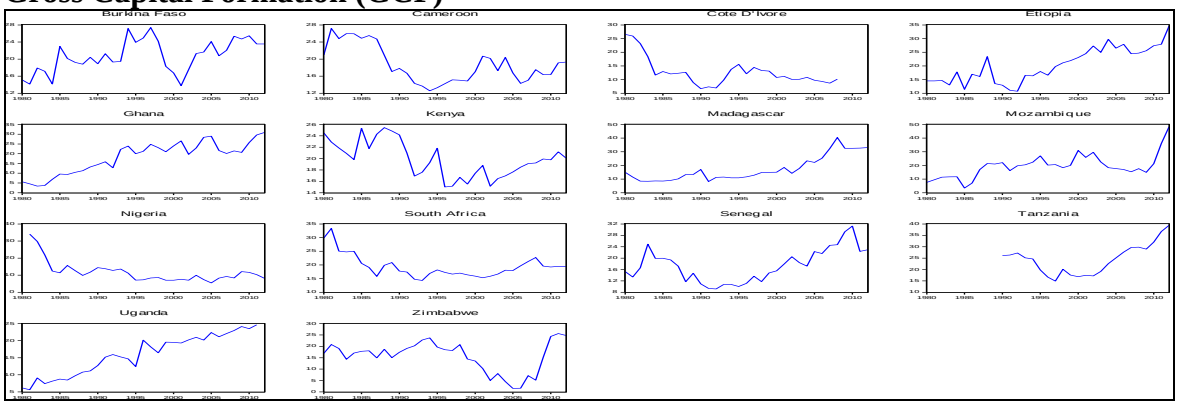
Financial Development (Credit to Private Sector as a Percentage of GDP)



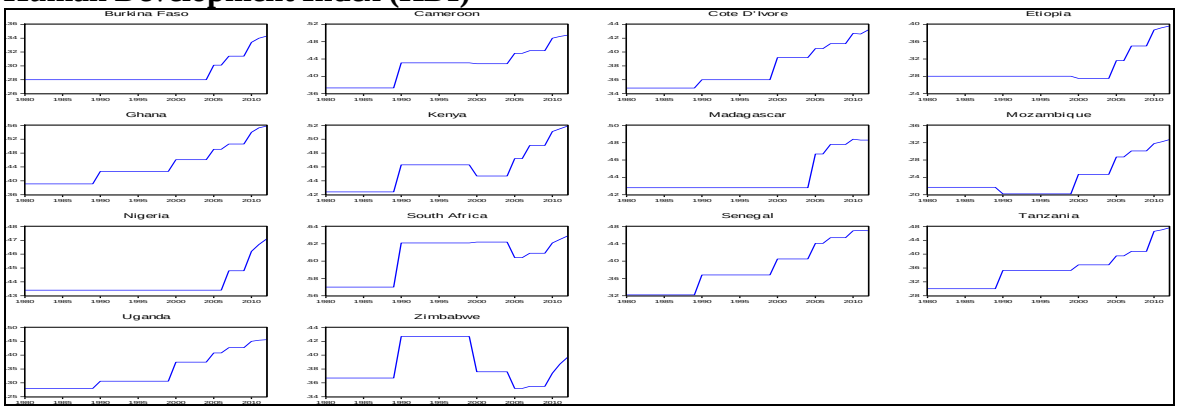
Real Per Capita GDP



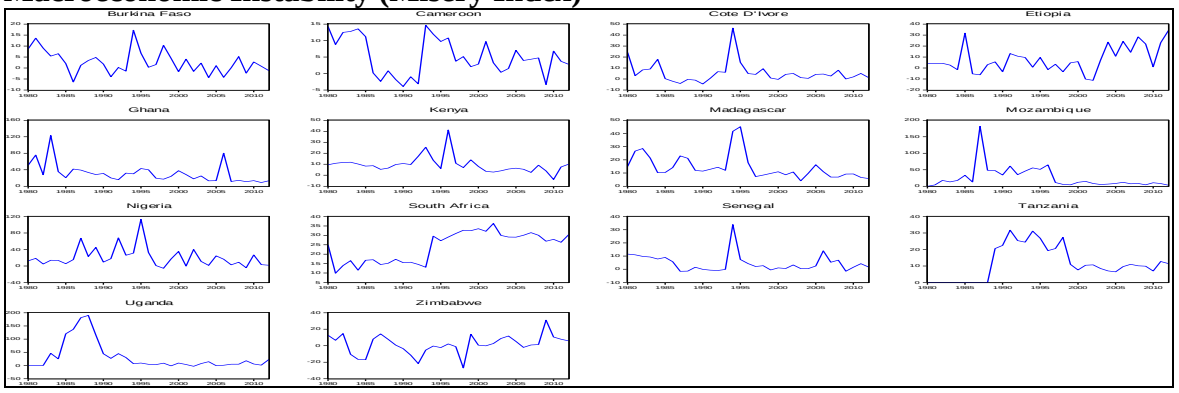
Gross Capital Formation (GCF)



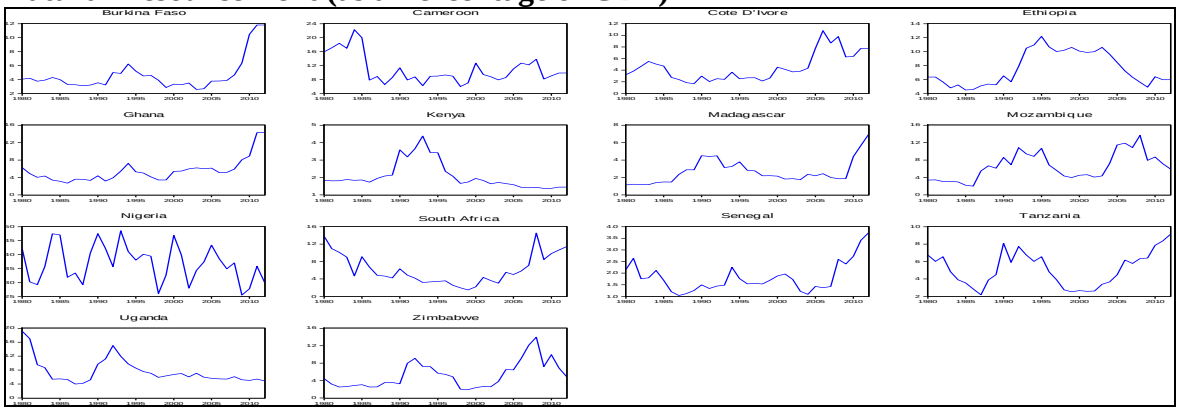
Human Development Index (HDI)



Macroeconomic Instability (Misery Index)



Natural Resource Rent (as a Percentage of GDP)



APPENDIX 2: Panel Estimation Results Using Individual Components of Financial Sector Reform

Variables	(A) Effects of Financial Reform on Fin/Devt		(B) Effects of Financial Reform on real GDP		(C) Effects of Financial Reform on GCF		(D) Effects of Financial Reform on Human Devt		(E) Effects of Financial on Economic Misery	
	Fixed-Effects	Random-Effect	Fixed-Effects	Random-Effect	Fixed-Effects	Random-Effect	Fixed-Effects	Random-Effects	Fixed-Effects	Random-Effects
Constant	17.0025 (7.53)***	19.7228 (4.25)***	724.0907 (10.68)***	755.0797 (5.05)***	16.1217 (11.37)***	16.0163 (16.11)***	0.3885 (39.11)***	0.3930 (22.31)***	25.7308 (5.49)***	23.8757 (7.35)***
Credit Controls	-1.9251 (-1.91)*	-2.7079 (-2.96)**	-6.8411 (-0.49)	-1.7710 (-0.12)	0.4746 (0.75)	0.47360 (0.87)	0.0098 (2.21)**	0.00450 (1.08)	0.3419 (0.16)	-1.0429 (-0.57)
Interest Rate Controls	0.7180 (0.89)	,-0.1297 (-0.18)	-28.8549 (-2.60)**	-48.0205 (-4.53)**	-0.2040 (-0.40)	-0.3101 (-0.73)	0.0029 (0.83)	0.0066 (2.09)**	-1.5794 (-0.94)	-2.2492 (-1.59)
Entry Barriers	2.0406 (2.44)**	1.2871 (1.61)*	-0.4091 (-0.03)	-10.9792 (-0.90)	0.6994 (1.33)*	0.21580 (0.47)	-0.0105 (-2.86)**	-0.0119 (-3.28)**	1.4076 (0.81)	1.0042 (0.65)
Prudential Regulation	4.5644 (2.98)**	4.3194 (3.22)**	62.5253 (2.95)**	86.5964 (4.28)**	1.9897 (2.07)**	3.4325 (4.22)***	-0.0068 (-1.01)	-0.0060 (-0.98)	-5.8939 (-1.85)*	-1.9468 (-0.71)
State-Ownership in Banking sector	-5.1294 (-5.45)***	-4.4813 (-5.38)***	-18.6533 (-1.41)*	1.5121 (0.18)	0.4216 (0.71)	0.5398 (2.14)**	0.0111 (2.69)**	0.0121 (3.20)**	-5.7147 (-2.92)**	-3.6075 (-2.28)**
Foreign Account Openness	2.6479 (2.84)**	2.5551 (3.07)**	51.9326 (4.01)***	64.7424 (5.14)***	0.8178 (1.40)*	0.6006 (2.20)**	0.0045 (1.12)	-0.0014 (-0.38)	-5.5515 (-2.87)**	-4.7041 (-2.80)**
Securities Market Policy	8.7393 (5.77)***	8.7104 (6.21)***	37.0721 (1.76)*	41.4511 (1.91)*	-2.5220 (-2.65)**	-1.8043 (-2.20)**	0.0163 (2.44)**	0.0223 (3.48)**	4.8266 (1.93)*	5.0152 (1.86)*
No. of Obs.	462	462	462	462	462	462	462	462	462	462
R^2	0.8807	0.2642	0.988	0.172	0.3009	0.108	0.8133	0.1654	0.3771	0.0903
F-Statistics	58.10 (0.0000)***	23.29 (0.0000)***	635.74 (0.0000)***	10.47004 (0.0000)***	3.38 (0.0000)**	7.85 (0.0000)***	34.27 (0.000)***	12.85 (0.000)***	4.76 (0.000)**	6.44 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance***

APPENDIX 3: Income-Effect Analysis: Panel Estimation Results on Financial Reform and Financial Development in SSA

Variables	Low-Income-Economies			Lower-Middle-Income-Economies			Upper-Middle-Income-Economies
	Fixed-Effect	Random-Effect	Dynamic Panel	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation
Constant	8.7971 (2.45)**	2.3527 (1.12)	0.3452 (0.19)	-17.9438 (-2.57)**	2.9315 (1.54)*	-1.9565 (-1.10)	68.6268 (1.05)
CPS(-1)			0.6622 (14.98)***			0.8214 (21.56)***	
FINANCIAL REFORM	-2.3516 (-1.53)*	-1.2106 (-1.87)*	-0.5432 (-0.93)	0.7405 (0.42)	8.4454 (7.23)***	0.6048 (1.81)*	31.9984 (6.09)***
NATURAL RESOURCE	0.2562 (1.22)*	0.1891 (1.22)*	0.1374 (0.99)	0.0624 (0.55)	-0.1307 (-3.99)**	-0.0283 (-1.16)	-0.6069 (-0.51)
REAL GDP PER CAPITA	0.0097 (1.14)	0.0133 (2.59)**	0.0185 (4.89)***	0.0322 (8.14)***	0.0104 (4.75)**	0.0033 (1.98)**	--0.0127 (-1.01)
INFLATION	0.0024 (0.11)	-0.0281 (-1.47)*	-0.0193 (-1.20)*	0.0115 (0.39)	-0.1084 (-3.80)**	-0.0545 (-3.94)**	0.2342 (0.27)
CURRENT ACCOUNT DEFICIT	0.5678 (0.39)	-0.0418 (-0.04)	-0.8146 (-0.97)	0.0250 (0.34)		0.0087 (0.24)	-1.4849 (-1.96)*
GOVT CONSUMPTION	0.0132 (0.09)	0.1399 (1.23)	-0.0823 (-0.87)	0.9592 (6.09)***		0.2272 (2.63)**	-1.2682 (-0.81)
SEC. SCHOOL ENROLMENT	0.2702 (3.53)**	0.4046 (9.14)***	0.005 (2.86)**	-0.0255 (-0.18)		-0.0378 (-1.49)*	0.7917 (2.67)**
No. of Obs	264	264	264	165	165	165	33
R^2	0.6823	0.5369	0.6824	0.8476	0.6562	0.9341	0.9357
F-Statistics	10.13 (0.000)***	42.40 (0.000)***	76.13 (0.000)***	15.65 (0.000)***	6.78 (0.000)***	236.35 (0.000)***	51.99 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

Objective Two (2): Analysis of Effects of Financial Sector Reforms and Economic Performance

APPENDIX 4A: Income-Effect Analysis: Panel Estimation Results on Effects of financial reform on real per capita GDP

Variables	Low-Income-Economies			Lower-Middle-Income-Economies			Upper-Middle-Income-Economies
	Fixed-Effect	Random-Effect	Dynamic Panel	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation
Constant	180.2811 (7.00)***	197.3042 (8.74)***	3.6873 (0.86)	803.017 (5.35)***	804.497 (14.97)***	92.902 (2.01)**	5129.798 (8.57)***
GDPPC(-1)			0.9953 (91.04)***			0.9457 (33.65)***	
FINR	55.1612 (4.78)***	12.1086 (1.86)*	4.3937 (2.71)**	81.4322 (2.05)**	75.5808 (2.61)**	6.8302 (0.51)	-216.903 (-3.04)**
INF	-0.4982 (-2.94)**	-0.5634 (-2.97)**	-0.0606 (-1.37)	-1.2973 (-1.30)			-19.0534 (-1.17)
CAB	-14.9321 (-1.31)	8.3065 (0.81)	-3.4445 (-1.44)*	7.2552 (4.73)**			-44.3497 (-6.27)***
GCON	2.7730 (2.59)**	5.6533 (4.85)**		5.3168 (1.39)*			8.4425 (0.38)
SSE	4.3012 (8.00)***	4.5752 (10.28)***	-0.1611 (-1.60)*	-7.5523 (-2.46)**	-5.2022 (-2.95)**	-2.9233 (-2.92)**	0.4771 (0.10)
NATR	-3.3001 (-1.99)**	-5.3076 (-3.30)**	0.1330 (0.35)	3.9124 (1.48)*	-0.8922 (-0.63)	3.1345 (3.81)**	42.4376 (2.95)**
RINTR	-0.2461 (-1.31)	-0.0478 (-0.22)	-0.1320 (-2.77)**	-0.5720 (-0.33)	6.2126 (3.99)**	0.7036 (1.88)*	-23.0161 (-2.36)**
No. of Obs	264	264	256	165	165	160	33
R^2	0.9021	0.5138	0.9892	0.8848	0.3231	0.9867	0.9278
F-Statistics	43.49 (0.000)***	38.65 (0.000)***	32.63 (0.000)***	21.62 (0.000)***	19.09 (0.000)***	222.20 (0.000)***	45.94 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 4B: Income-Effect Analysis: Panel Results on Effects of financial reform on gross capital formation (GCF)

Variables	Low-Income-Economies			Lower-Middle-Income-Economies			Upper-Middle-Income-Economies
	Fixed-Effect	Random-Effect	Dynamic Panel	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation
Constant	14.0455 (5.10)***	9.9463 (5.20)***	1.2256 (1.22)	29.0835 (3.55)**	16.2344 (9.47)***	7.6593 (2.38)**	62.8340 (10.48)***
GCF(-1)			0.8706 (23.73)***			0.8193 (21.44)***	
FINR	0.8960 (0.72)	1.6927 (2.97)**	0.5060 (1.50)*	-0.3294 (-0.15)	0.4774 (0.53)	-0.4686 (-0.47)	-3.0537 (-4.28)**
INF	-0.0333 (-1.84)*	-0.0218 (-1.31)	-0.0004 (-0.04)	-0.1324 (-2.43)**			-0.2807 (-1.73)*
CAB	-0.8269 (-0.68)	-4.4279 (-5.01)***	-1.5986 (-3.03)**	-0.2959 (-3.53)**			-0.3525 (-4.98)**
GCON	0.4841 (4.24)**	0.4080 (4.08)**		0.1843 (0.88)			-1.3201 (-5.93)***
SSE	-0.0799 (-1.39)*	-0.0356 (-0.96)	-0.0136 (-0.59)	-0.5234 (-3.12)**	0.0118 (0.20)	-0.1928 (-2.50)**	-0.1413 (-3.19)**
NATR	-0.0930 (-0.52)	0.2172 (1.56)	0.1567 (1.87)*	0.2117 (1.47)*	-0.08229 (-1.57)*	0.0813 (1.26)	0.2066 (1.43)*
RINTR	-0.0135 (-0.67)	-0.0194 (-1.05)	-0.0051 (-0.48)	-0.0888 (-0.96)	-0.0525 (-1.07)	0.0364 (1.27)	-0.1499 (-1.54)*
No. of Obs	264	264	256	165	165	160	33
R^2	0.4965	0.3045	0.7745	0.4903	0.5202	0.8801	0.9137
F-Statistics	4.65 (0.000)***	16.01 (0.000)***	121.70 (0.000)***	2.70 (0.052)**	5.5 (0.01)**	21.85 (0.000)***	37.82 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 4C: Income-Effect Analysis: Panel Results on Effects of financial reform on human development

Variables	Low-Income-Economies			Lower-Middle-Income-Economies			Upper-Middle-Income-Economies
	Fixed-Effect	Random-Effect	Dynamic Panel	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation
Constant	0.3290 (11.75)***	0.4463 (18.91)***	0.0401 (3.35)**	0.4080 (14.93)***	0.3126 (34.78)***	0.1283 (3.57)**	0.5259 (11.56)***
HDI(-1)			0.9129 (38.07)***			0.7226 (9.73)***	
FINR	0.0567 (4.52)**	0.0174 (2.22)**	0.00018 (0.05)	0.0021 (0.29)	0.0096 (1.91)*	0.0017 (1.96)*	0.0331 (6.13)***
INF	-0.0003 (-1.81)*	-0.0009 (-3.85)**	-0.00012 (-1.37)	-0.000097 (-0.53)		-0.0000172 (-0.12)	-0.0008 (-0.67)
CAB	0.0098 (0.79)	0.0271 (2.23)**	0.00043 (0.08)	-0.00359 (-12.86)***		-0.00117 (-3.63)**	0.000344 (0.64)
GCON	0.0000638 (0.05)	-0.0025 (-2.04)**		0.00053 (0.77)		0.000302 (2.56)**	0.00246 (1.96)*
SSE	0.00071 (1.21)	0.0017 (4.41)**	0.00021 (1.89)*	0.00011 (0.21)	0.0024 (8.28)***	0.00024 (2.55)**	0.00047 (2.40)**
NATR	-0.00120 (-0.66)	-0.0074 (-4.12)**	-0.00065 (-0.86)	-0.00092 (-1.93)*	-0.0026 (-11.69)***	-0.00017 (-0.46)	-0.000764 (-0.69)
RINTR	-0.00032 (-1.58)*	-0.00054 (-2.16)**	-0.00017 (-1.79)*	0.000060 (0.19)	;-0.000185 (-0.72)	0.000045 (-1.94)*	-0.00124 (1.98)*
No. of Obs	264	264	256	165	165	160	33
R^2	0.7242	0.2407	0.8895	0.9305	0.6599	0.9609	0.8381
F-Statistics	12.39 (0.000)***	11.59 (0.000)***	285.47 (0.000)***	37.67 (0.000)***	77.61 (0.000)***	66.41 (0.000)***	18.49 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 4D: Income-Effect Analysis: Panel Results on Effects of financial reform on economic misery

Variables	Low-Income-Economies			Lower-Middle-Income-Economies			Upper-Middle-Income-Economies
	Fixed-Effect	Random-Effect	Dynamic Panel	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation
Constant	1.2901 (0.76)	1.6814 (1.75)*	1.1864 (1.61)	2.1143 (0.60)	23.9210 (8.27)***	8.7816 (0.69)	9.9870 (0.57)
MISR (-1)			0.0171 (1.39)			0.0775 (1.19)	
FINR	-0.2918 (-0.40)	-0.1984 (-0.61)	-0.2133 (-0.62)	0.1112 (0.12)	2.7935 (1.82)*	0.9295 (2.22)**	11.7030 (5.66)***
INF	0.9827 (92.09)***	0.9963 (104.03)***	0.9848 (78.66)***	1.001 (43.35)***			0.7583 (1.61)*
CAB	0.1668 (0.23)	0.2192 (0.44)	0.2790 (0.53)	-0.0361 (-1.01)			;-0.0233 (-0.11)
GCON	-0.0519 (-0.77)	-0.0402 (-0.81)		-0.0421 (-0.47)			-2.5533 (-3.96)**
SSE	-0.0366 (-1.08)	-0.0308 (-1.928)**	-0.0332 (-1.78)*	-0.0357 (-0.50)	-0.1523 (-1.63)*	0.6281 (2.02)**	0.4139 (3.23)**
NATR	0.1535 (1.46)*	-0.0391 (-0.53)	-0.0404 (-0.49)	-0.0692 (-1.13)	-0.0938 (-1.27)	-0.3281 (-1.24)	-0.5159 (-1.23)
RINTR	0.0022 (0.19)	0.0056 (0.55)	0.0050 (0.47)	0.0345 (0.88)	-1.1547 (-14.07)***	-1.2958 (-10.90)***	0.2049 (0.72)
No. of Obs	264	264	256	165	165	160	33
R^2	0.9862	0.9815	0.9819	0.9887	0.655	0.7636	0.7965
F-Statistics	337.55 (0.000)***	1947.47 (0.000)***	1829.45(0.000)***	247.96 (0.000)***	75.95 (0.000)***	9.61 (0.000)***	13.98 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 5.1: Stock Market Effects Analysis: Results on Effects of financial reform on financial development

Variable	Panel Estimation of 7 Countries with Comparative Stock Market Size				Nigeria		South Africa
	Fixed-Effect	Random-Effect	Dynamic Panel		OLS Estimation		OLS Estimation
C	-7.8651 (-1.79)*	-4.9915 (-1.46)	-4.2518 (-1.11)		19.5375 (2.16)**		96.2809 (1.91)*
CPS(-1)			0.4843 (7.94)***				
FINR	0.3296 (0.16)	0.8159 (1.99)*	0.6109 (6.36)***		1.1820 (2.62)**		32.9008 (6.58)***
NATR	-0.3466 (-1.92)*	-0.0457 (-0.22)	-0.0859 (-2.45)**		-0.3520 (-2.63)**		-1.7622 (-1.89)*
GDPPC	0.0321 (4.64)**	0.0107 (2.98)**	0.0199 (3.25)**		-0.0018 (-0.16)		-0.0142 (-1.08)
INF	0.0018 (0.08)	-0.0230 (-0.97)	-0.0034 (-0.17)		-0.0325 (-0.92)		-0.6742 (0.77)
CAB	0.1371 (0.081)				0.2368 (2.01)**		-2.0709 (-2.71)**
GCON	-0.0396 (-0.20)	0.7467 (4.24)**	-0.0346 (-0.20)		0.4918 (1.86)*		-1.1463 (-0.80)
SSE	0.2489 (2.51)**	0.2125 (4.06)**	0.0910 (1.01)		0.2406 (1.52)*		0.5193 (2.43)**
No. of Obs	231	231	224		33		33
R^2	0.6176	0.3559	0.7801		0.6646		0.9385
F-Statistics	9.25 (0.000)***	20.63 (0.000)***	14.43 (0.000)***		7.07 (0.0001)***		54.50 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 5A: Stock Market Effects Analysis: Results on Effects of financial reform on real per capita GDP

Variable	Panel Estimation of 7 Countries with Comparative Stock Market Size			Nigeria	South Africa
	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation	OLS Estimation
C	356.1129 (7.01)***	287.3116 (4.34)**	-9.0994 (-0.96)	358.5724 (2.45)**	4765.011 (8.54)***
GDPPC(-1)			0.9677 (102.37)***		
FINR	47.0220 (2.54)**	37.9331 (4.46)**	3.56 (5.39)**	55.2028 (1.49)*	-167.277 (-2.28)**
CAB	-35.2419 (-2.45)**		-1.6483 (-0.46)	4.3705 (2.29)**	-39.5457 (4.77)**
GCON	2.7394 (1.52)*	5.3956 (3.13)**	0.2991 (0.61)	10.3571 (2.49)**	-3.3206 (-0.16)
SSE	-0.6551 (-0.55)	1.4631 (1.82)**	0.2411 (1.74)*	6.0134 (2.40)**	4.6249 (1.51)*
INF	-1.1033 (-5.53)***		-0.0644 (-0.96)	-2.8720 (-1.67)*	-7.1043 (-0.44)
RINTR	-0.7565 (-7.39)***	-0.6486 (-8.19)***	-0.0515 (-2.51)**	-3.5460 (-1.28)	-15.9443 (-1.58)*
NATR	12.5665 (6.71)***	9.4595 (5.35)***	2.5044 (4.21)**	0.0349 (0.01)	44.5297 (2.80)**
No. of Obs	231	231	224	33	33
R^2	0.9419	0.4109	0.9907	0.8436	0.9294
F-Statistics	66.74 (0.000)***	31.39 (0.000)***	2884.09 (0.000)***	19.27 (0.000)***	47.04 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 5B: Stock Market Effect Analysis: Results on Effects of financial reform on gross capital formation (GCF)

Variable	Panel Estimation of 7 Countries with Comparative Stock Market Size			Nigeria	South Africa
	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation	OLS Estimation
C	14.0449 (3.77)**	17.3882 (13.630***	0.5028 (0.40)	29.4355 (3.07)**	58.1082 (9.37)***
GCF(-1)			0.8282 (20.27)***		
FINR	0.7963 (0.58)	2.3216 (4.31)**	0.1512 (0.47)	-3.2223 (-1.32)	-3.1078 (-3.81)**
GCON	0.6400 (4.87)**		0.1115 (1.73)*	0.3574 (1.	-1.4593 (-6.36)***
SSE	-0.3411 (-3.91)**	-0.0394 (-1.37)*	-0.0193 (-1.34)*	-0.1052 (-1.31)	-0.0686 (-2.02)**
INF	-0.0529 (-3.62)**	-0.0585 (-4.15)**	0.00098 (0.12)	-0.2340 (-2.07)**	-0.2172 (-1.27)
RINTR	-0.0279 (-3.72)**	-0.0147 (-2.95)**	-0.00061 (-0.22)	-0.3133 (-1.73)*	-0.1127 (-1.01)
CAB	-2.8198 (-2.68)**		-1.8177 (-3.95)**	0.0462 (0.37)	-0.3090 (-3.35)**
NATR	0.6870 (5.01)***	0.2476 (2.19)**	0.1586 (2.41)**	-0.2369 (-1.52)*	0.2975 (1.68)*
No. of Obs	231	231	224	33	33
R2	0.5508	0.1873	0.7839	0.5169	0.8959
F-Statistics	5.04 (0.000)**	10.37 (0.000)***	97.51 (0.000)***	3.82 (0.0058)**	30.74 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 5C: Stock Market Effect Analysis: Results on effects of financial reform on Economic Misery

Variable	Panel Estimation of 7 Countries with Comparative Stock Market Size			Nigeria	South Africa
	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation	OLS Estimation
C	20.7762 (2.59)**	9.0130 (3.76)**	8.7329 (2.23)**	-1.5610 (-0.90)	1.9874 (0.130
MISR(-1)			0.0954 (2.99)**		
FINR	0.2616 (0.08)	0.3521 (0.35)	0.0257 (2.40)**	0.0796 (0.18)	13.0246 (6.67)***
SSE	-0.2762 (-1.47)	-0.0458 (-1.81)*	-0.0259 (-2.57)**	0.0645 (2.16)**	0.3647 (4.48)**
CAB	1.2873 (0.56)		0.1177 (0.08)	-0.0596 (-2.63)**	0.0622 (0.28)
GCON	-0.2104 (-0.74)		-0.2280 (-1.15)	0.0049 (0.10)	-2.1135 (-3.84)**
INF	0.8349 (26.54)***	0.8385 (32.69)***	0.8058 (27.24)***	0.9840 (48.14)***	0.8825 (2.05)**
RINTR	-0.0039 (-0.24)	0.0048 (0.52)	0.0037 (0.45)	-0.0230 (-0.70)	0.3569 (1.33)
NATR	-1.3371 (-4.52)**	-0.9327 (-4.42)**	-0.6632 (-3.24)**	0.0109 (2.38)**	-0.4201 (-0.99)
No. of Obs	231	231	224	33	33
R^2	0.8821	0.8461	0.8819	0.99	0.8322
F-Statistics	30.77 (0.000)***	247.48 (0.000)***	200.71 (0.000)***	32.69 (0.000)***	17.71 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 5D: Stock Market Effects Analysis: Results on effects of financial reform on human development

Variable	Panel Estimation of 7 Countries with Comparative Stock Market Size			Nigeria	South Africa
	Fixed-Effect	Random-Effect	Dynamic Panel	OLS Estimation	OLS Estimation
C	0.3260 (23.79)***	0.2945 (6.94)***	0.0066 (1.11)	0.4492 (6.20)***	0.5091 (12.00)***
HDI(-1)			0.9714 (57.54)***		
FINR	0.0090 (1.82)*	0.0212 (9.04)***	0.0019 (5.63)**	0.0387 (2.10)**	0.0320 (5.76)***
CAB	0.00031 (0.08)		0.0032 (-1.95)*	-0.0035 (-3.72)**	0.00073 (1.15)
GCON	-0.0014 (2.97)**		-0.0000088 (-0.03)	-0.0024 (-1.20)	0.0029 (1.86)**
SSE	0.0012 (3.91)**	0.0025 (11.52)***	0.000117 (1.47)*	-0.0010 (-0.81)	-0.00036 (-1.58)*
INF	-0.000074 (-1.37)	-0.00014 (-2.76)**	-0.000024 (-0.82)	0.0021 (2.47)**	0.000362 (0.29)
RINTR	-0.000132 (-4.77)**	-0.000049 (-2.32)**	-0.0000086 (-0.88)	0.0035 (2.58)**	0.0013 (1.72)*
NATR	-0.000288 (-0.57)	0.000607 (1.28)	0.000263 (1.07)	0.00098 (0.84)	0.00039 (0.32)
No. of Obs	231	231	224	33	33
R^2	0.9562	0.7546	0.9785	0.6552	0.8411
F-Statistics	89.89 (0.000)***	138.42 (0.000)***	1226.69 (0.000)***	6.78 (0.000)***	18.91 (0.000)***

Source: Author's Computation. ***Where *, ** & *** represent 10%, 5% and 1% level of significance for the both t and F statistics***

APPENDIX 7:

Variance Decomposition Analysis for Each Sampled SSA Country

Figure 7: Variance Decomposition Analysis for Burkina Faso

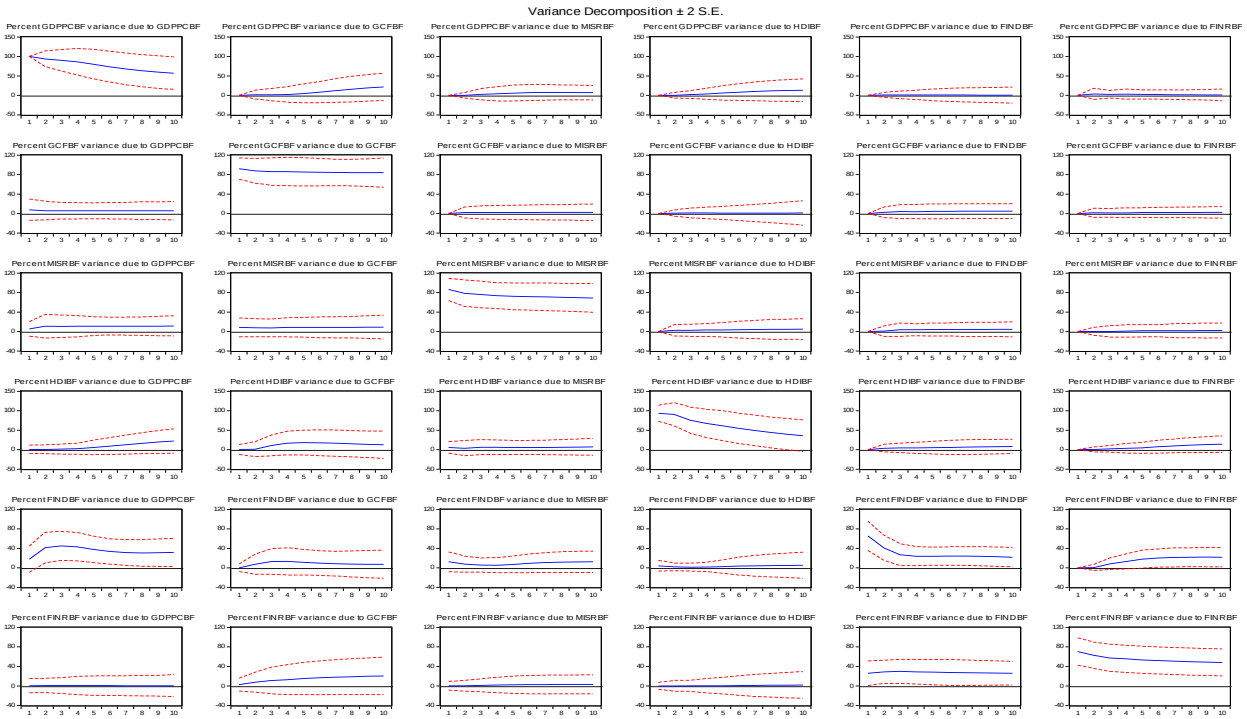


Figure 8: Variance Decomposition Analysis for Cameroon

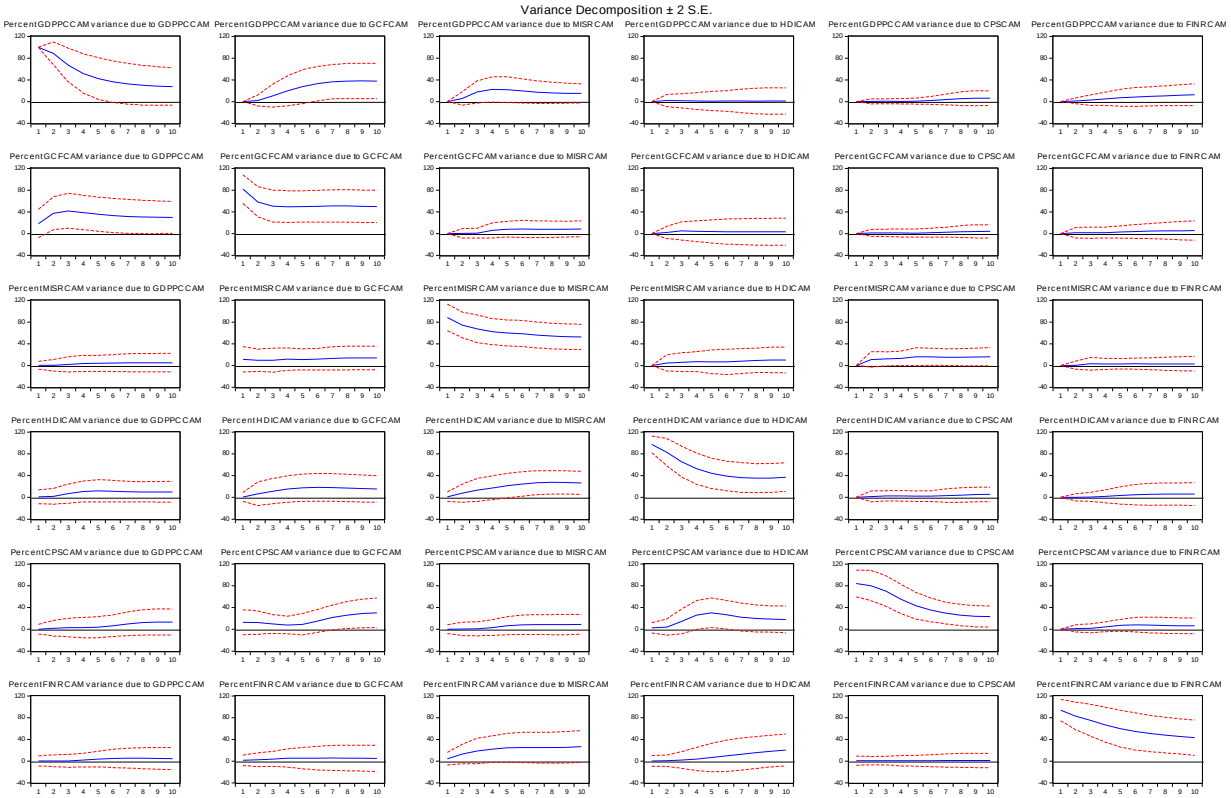


Figure 9: Variance Decomposition Analysis for Cote d'Ivoire

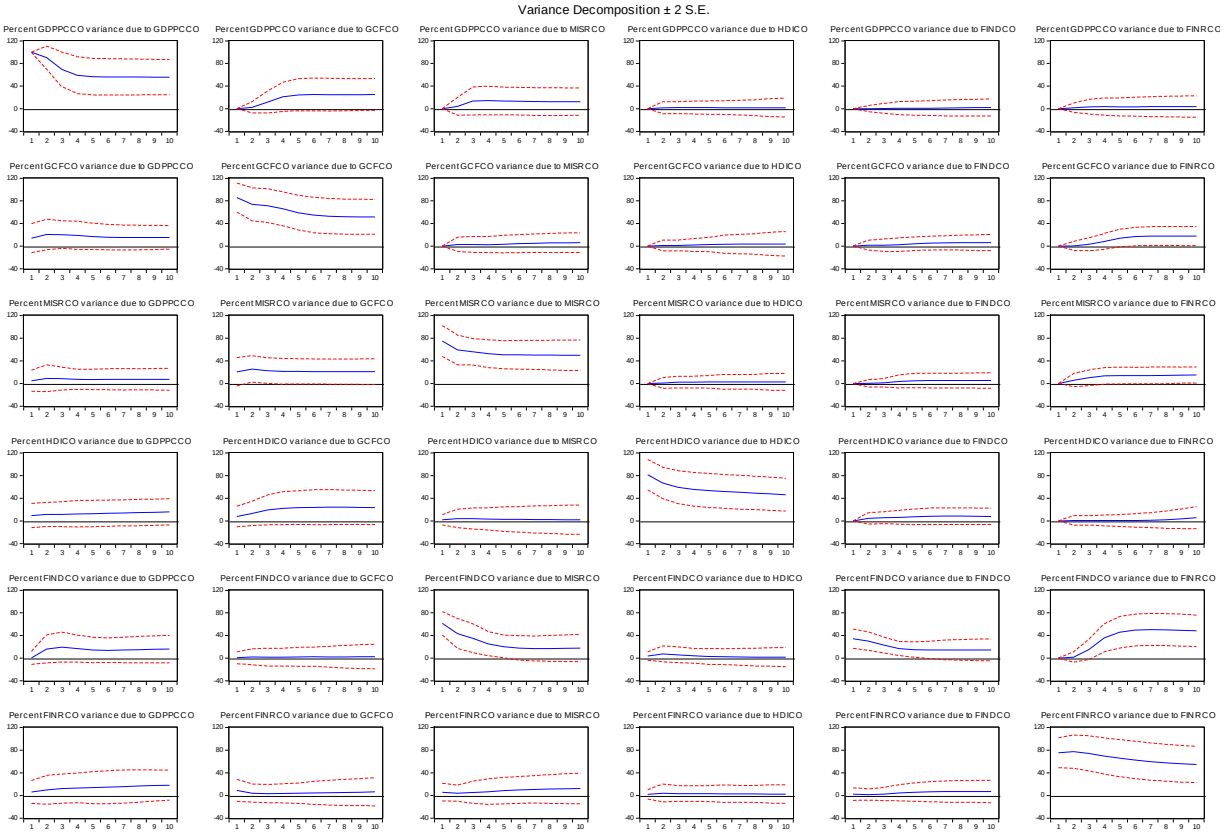


Figure 10: Variance Decomposition Analysis for Ethiopia

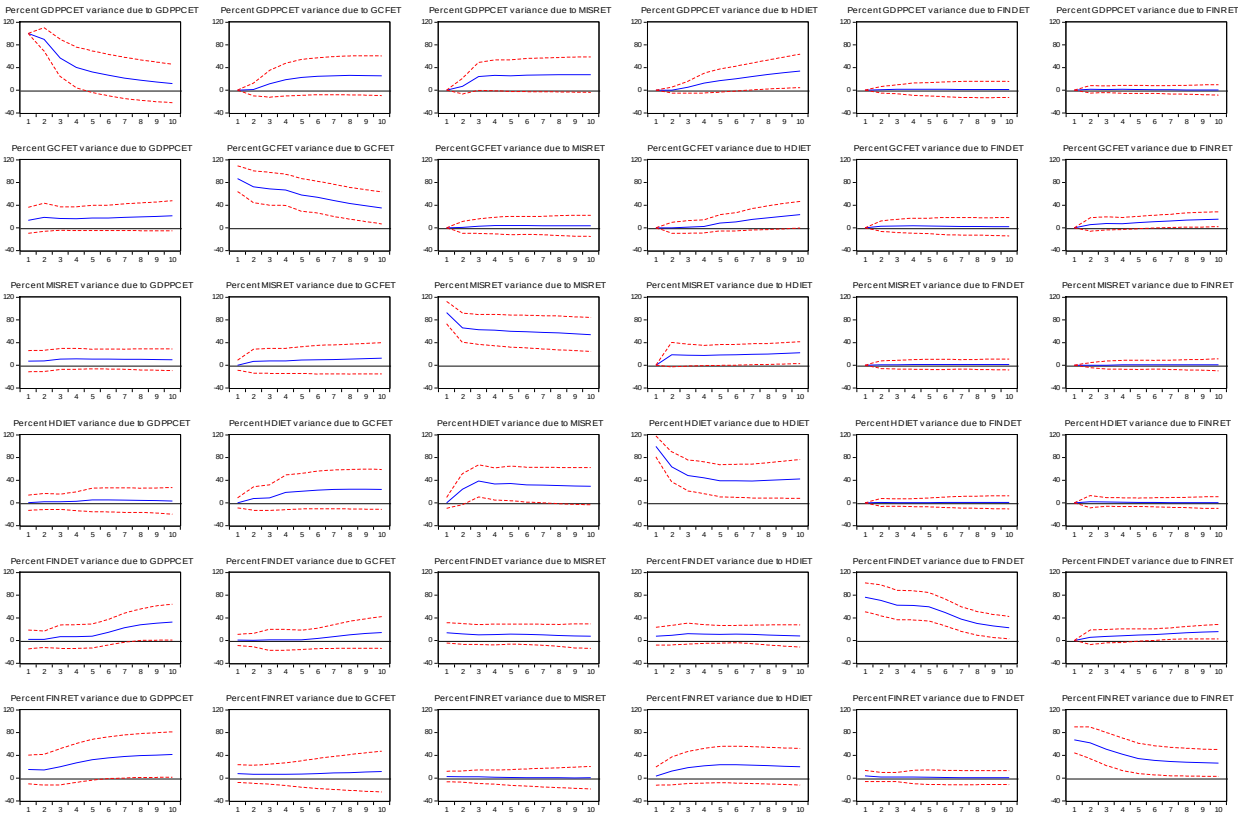


Figure 11: Variance Decomposition Analysis for Ghana

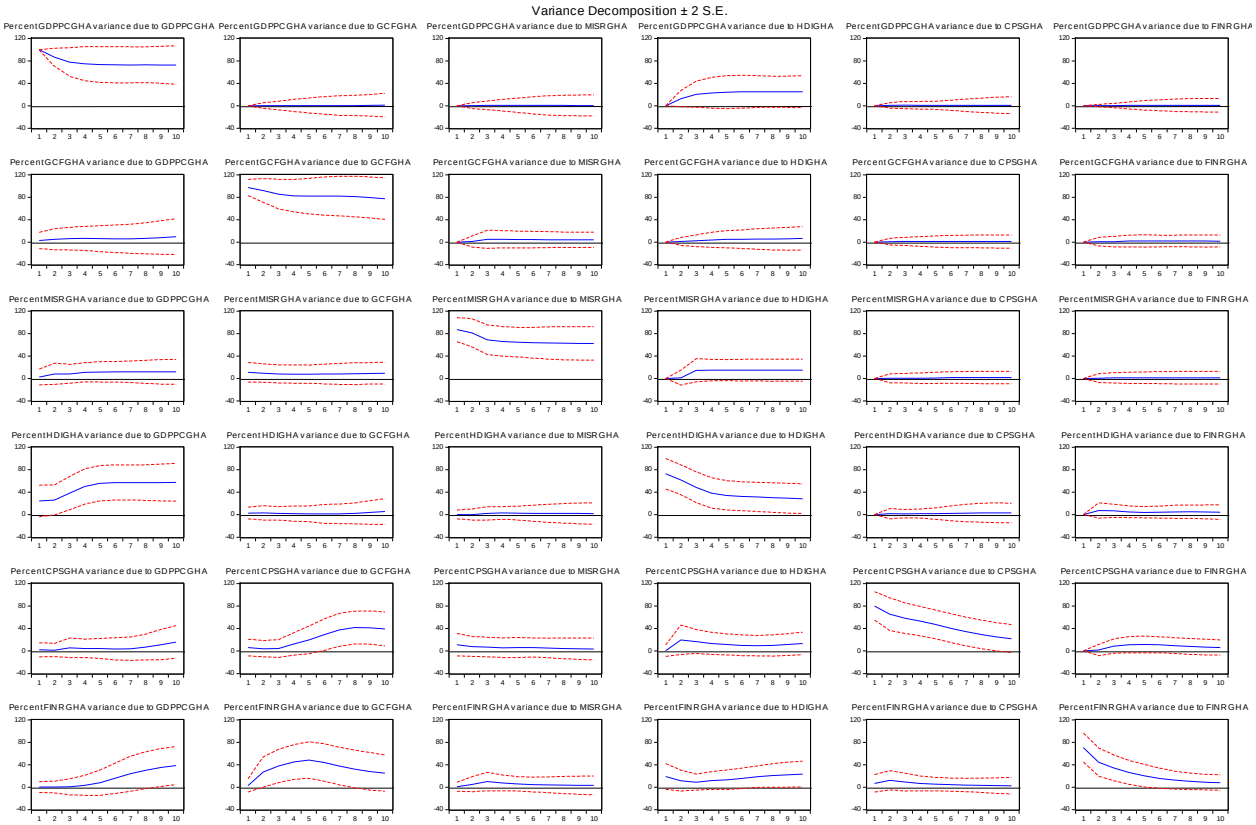


Figure 12: Variance Decomposition Analysis for Kenya

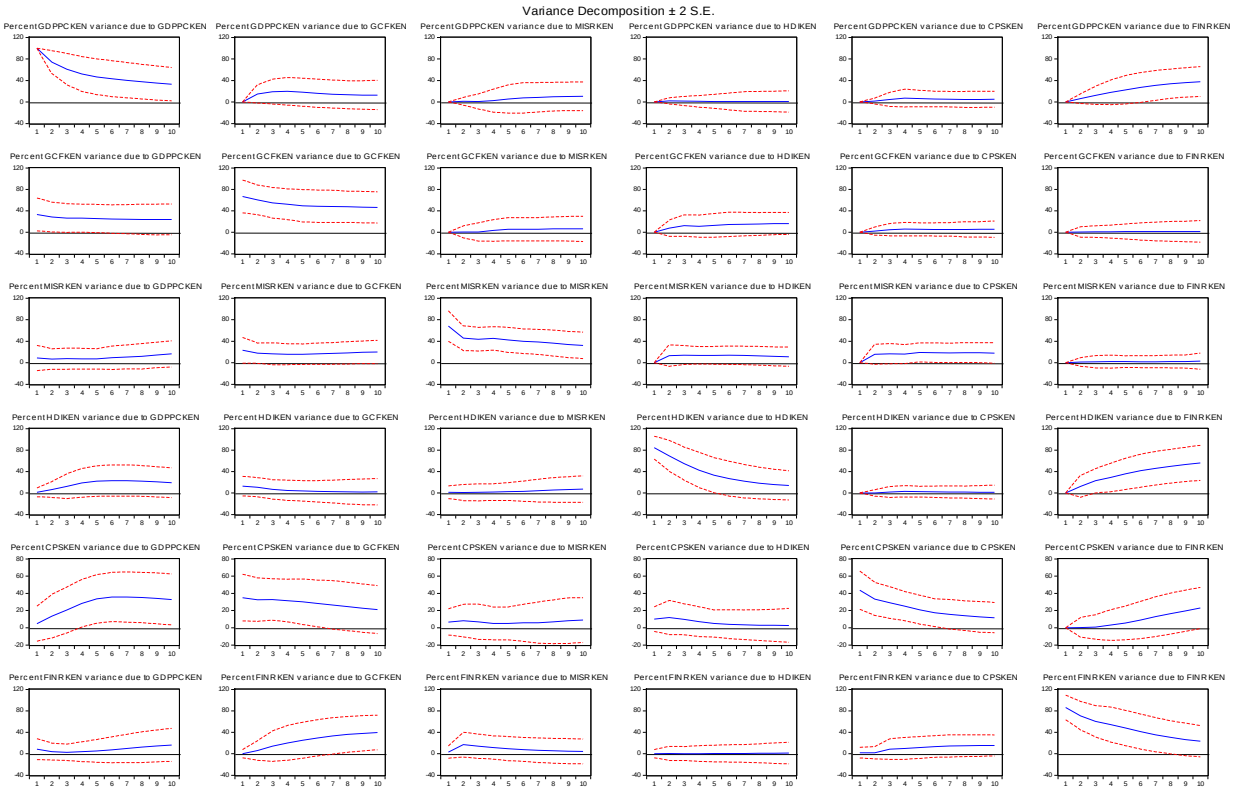


Figure 13: Variance Decomposition Analysis for Madagascar

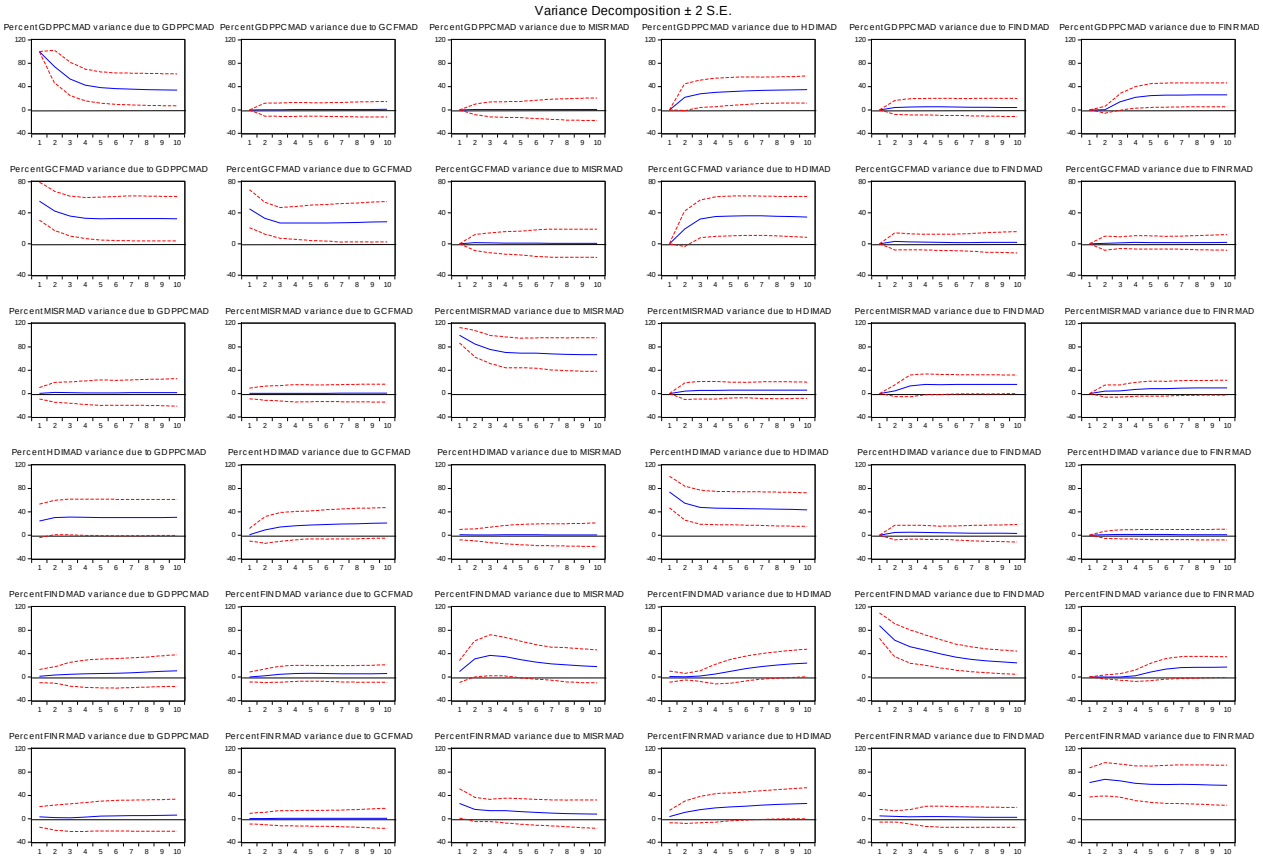


Figure 14: Variance Decomposition Analysis for Mozambique

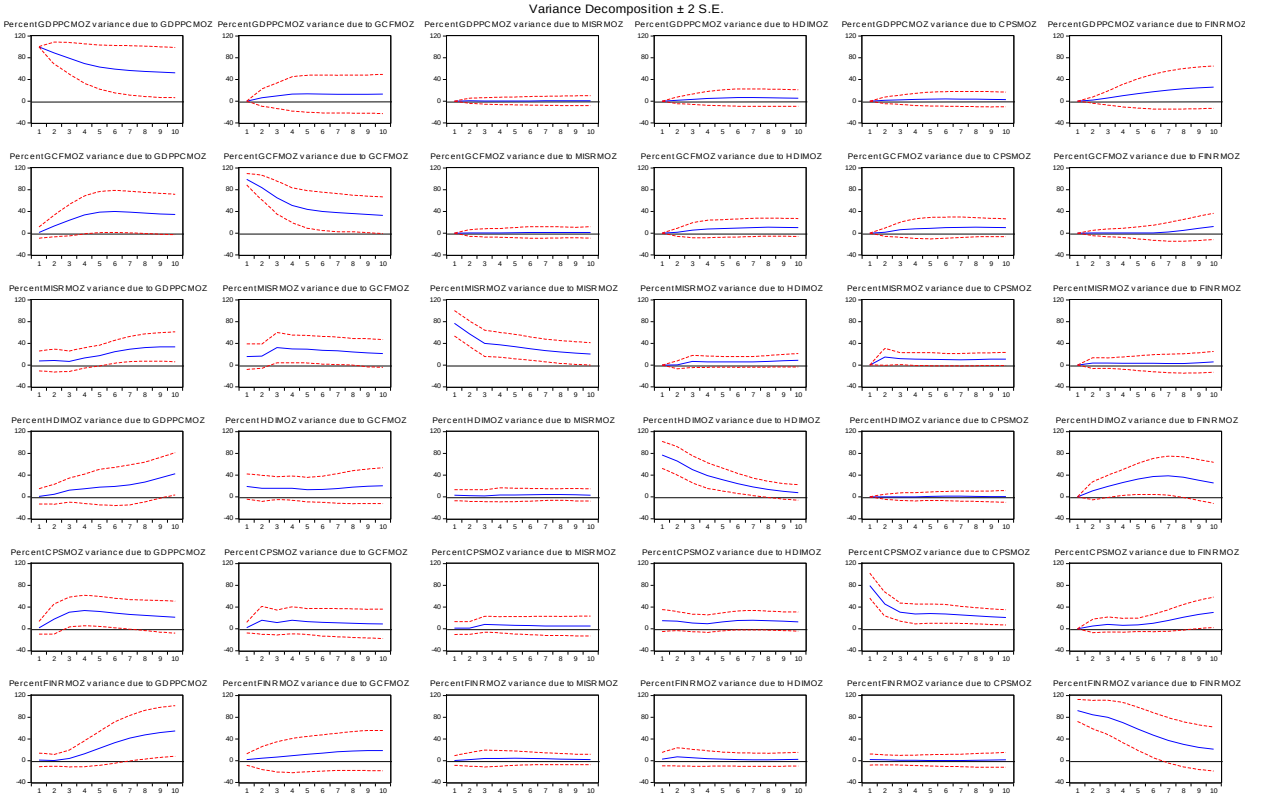


Figure 15: Variance Decomposition Analysis for Nigeria

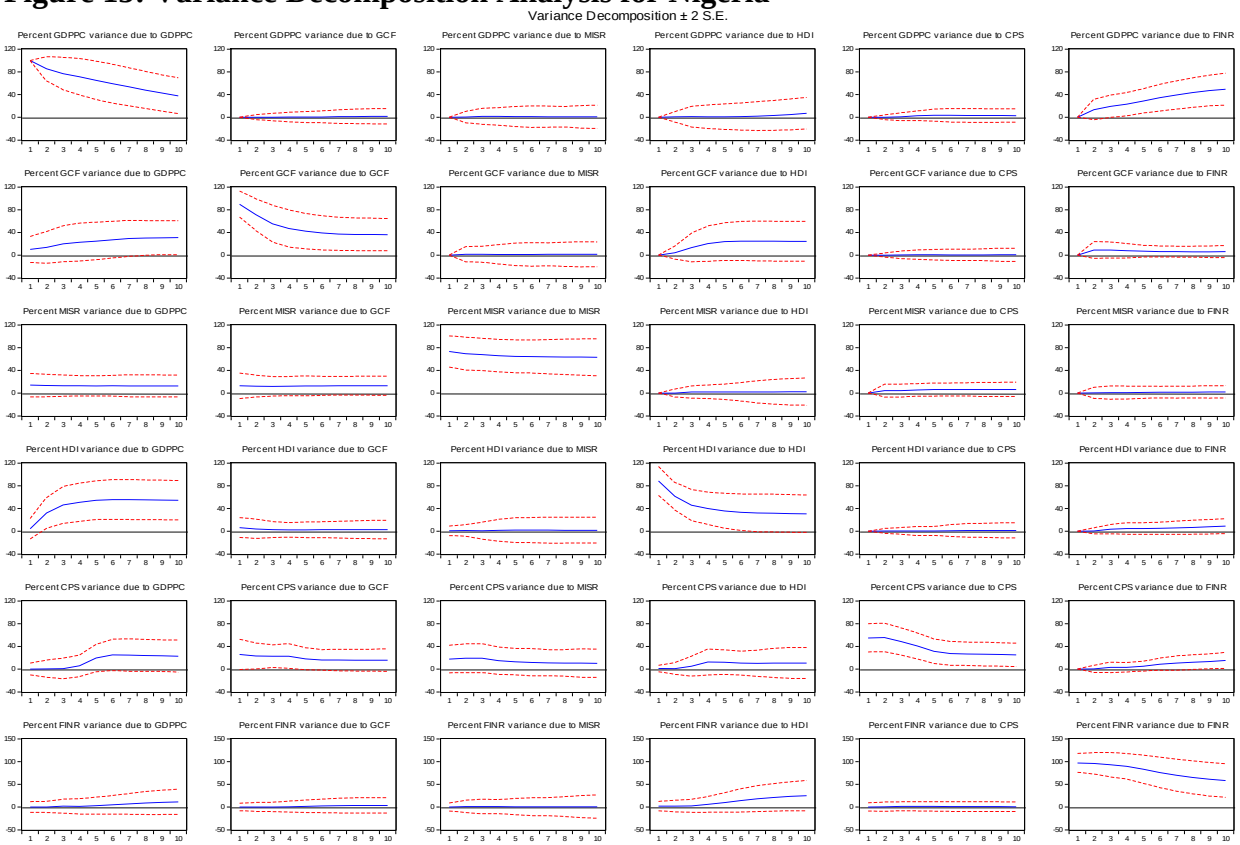


Figure 16: Variance Decomposition Analysis for Senegal

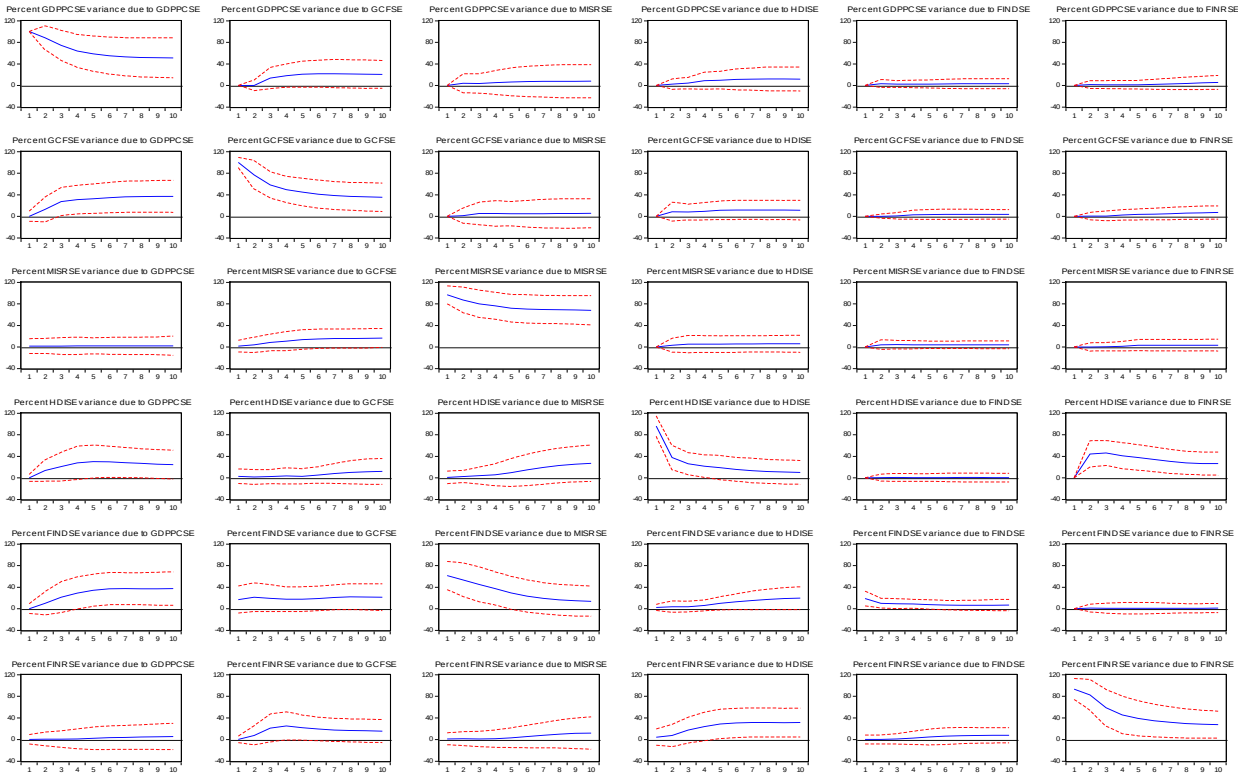


Figure 17: Variance Decomposition Analysis for South Africa

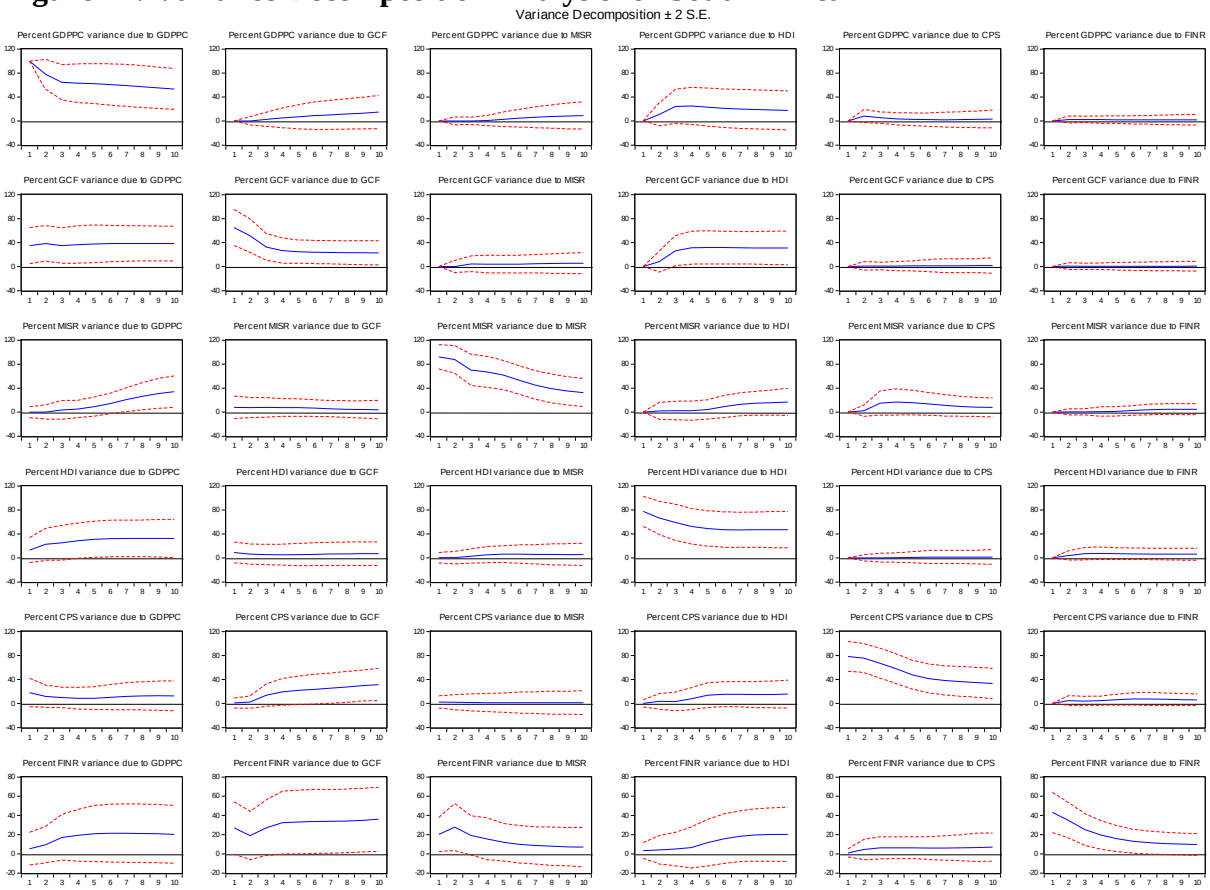


Figure 18: Variance Decomposition Analysis for Tanzania

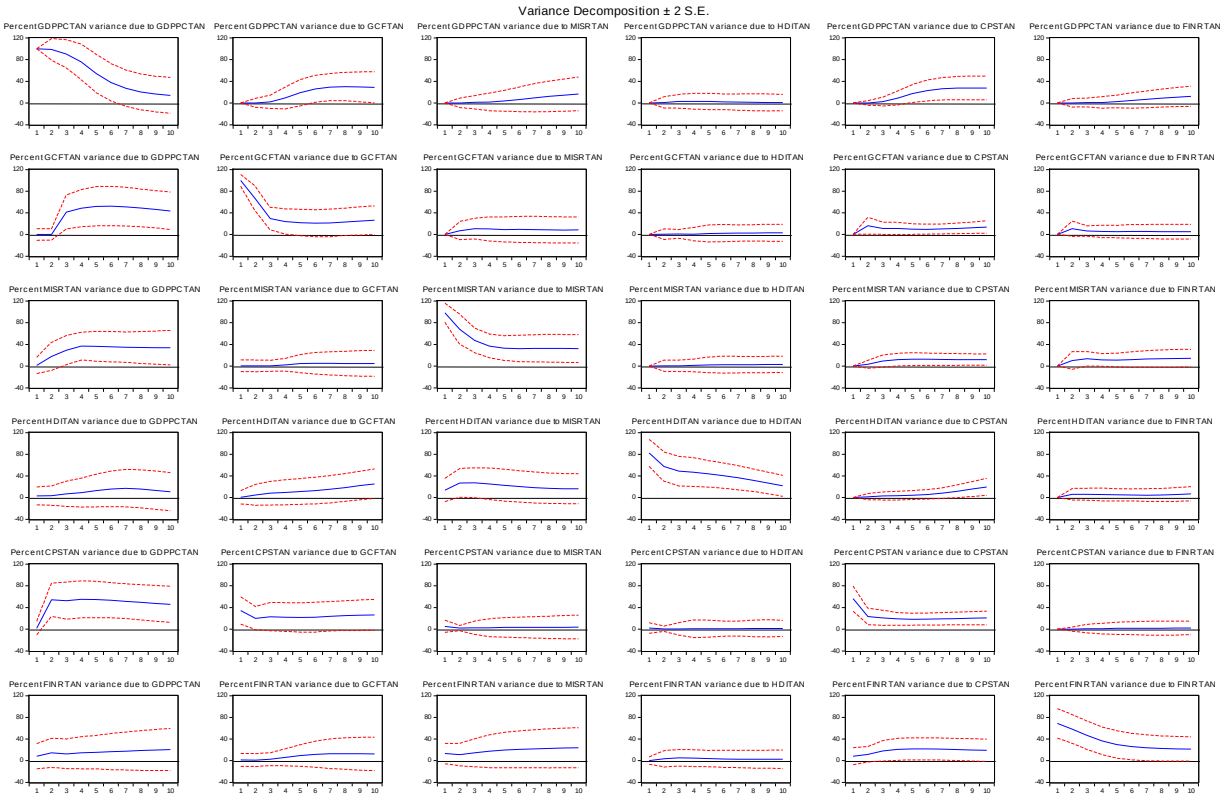


Figure 19: Variance Decomposition Analysis for Uganda

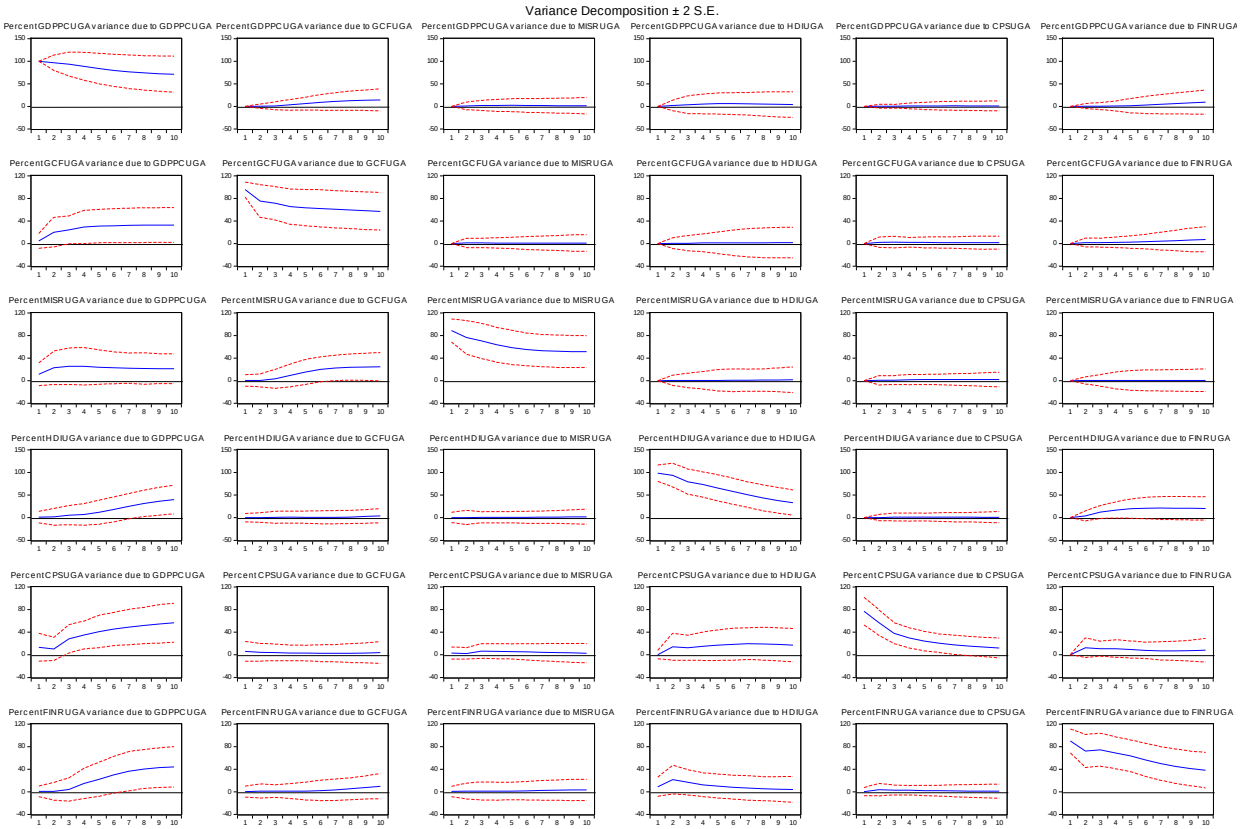
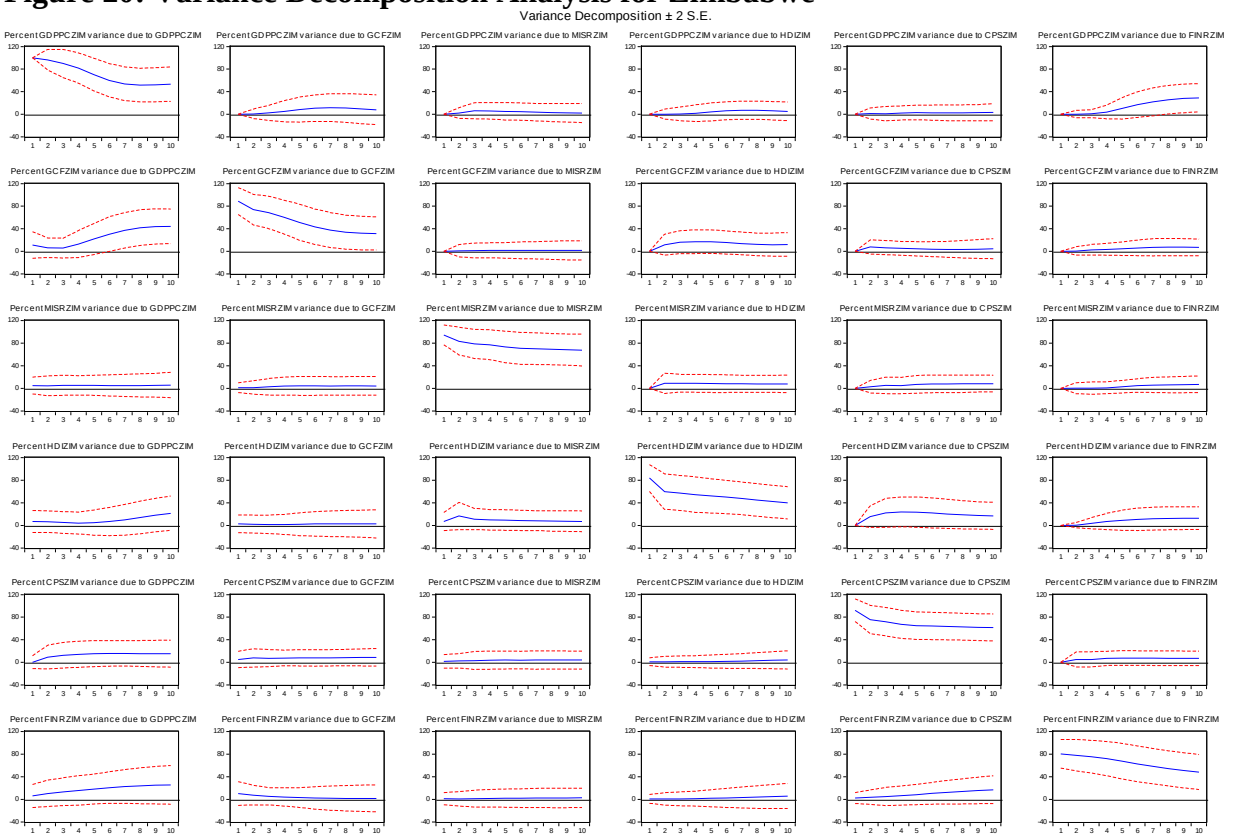
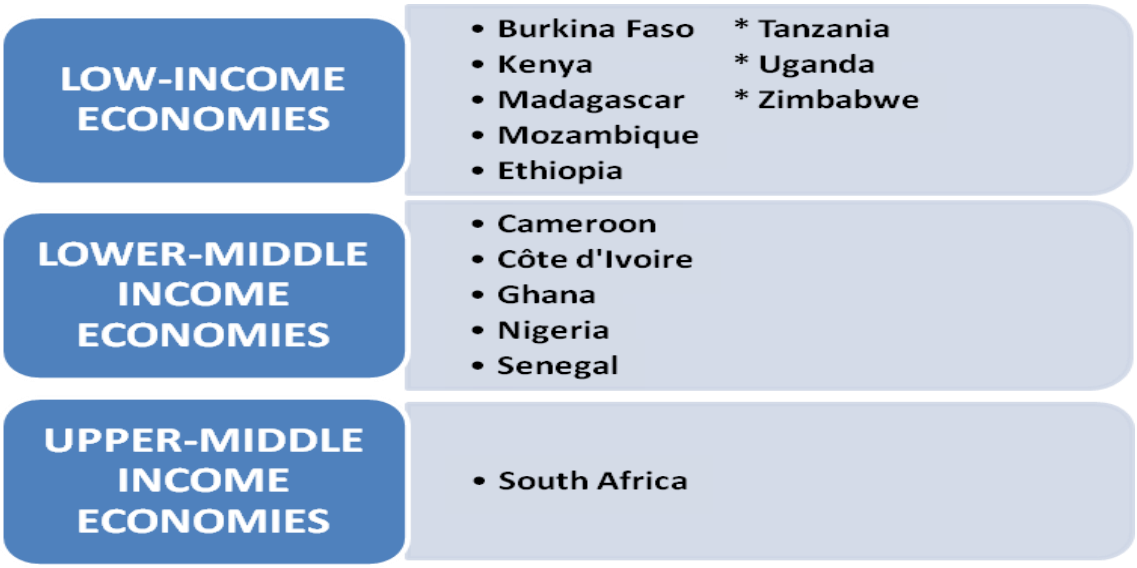


Figure 20: Variance Decomposition Analysis for Zimbabwe



APPENDIX 8:

A) Income Group of SSA Countries Employed in the Study



B) List of Countries With Stock Market (Domestic/ Regional)