RELATIONSHIP BETWEEN FINANCIAL MARKET DEVELOPMENT AND ECONOMIC GROWTH IN KENYA

GASHIRAYI CHABAYANZARA

D63/83777/2016

RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN FINANCE, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

NOVEMBER 2017

DECLARATION

I, the undersigned, declare that this research project is my original work and has not been submitted to any other college, institution or university for academic credit.

Gashirayi Chabayanzara

D63/83777/2016

Sign: …….. Date: ……

This research project has been submitted for examination with my approval as the appointed supervisor.

Ms. Hellen Kinyua, Lecturer

Sign: …… Date: …….

Dr. Mwangi Mirie, Senior Lecturer

Sign: …… Date: …….

ACKNOWLEDGEMENTS

It is my pleasure to thank those who made this project possible through their support. First and foremost I thank the Almighty God for his strength and guidance throughout my academic life. I am grateful for the efforts of my parents Mr. and Mrs. Chabayanzara who supported me financially and emotionally. I would like to express my gratitude to my supervisors, Ms. Hellen Kinyua and Dr. Mwangi Mirie, who gave me invaluable advice, support and time.

DEDICATION

This research project is dedicated to my family who have always encouraged and supported me in my endeavor to attain my academic goals

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

3G countries	Global Growth Generating countries
AEO	African Economic Outlook
CBK	Central Bank of Kenya
EIB	European Investment Bank
GDP	Gross Domestic Product
M1	Narrow Money
M2	Broad Money
MFI	Micro Finance Institutions
MFW4A	Making Finance Work for Africa
SACU	Southern African Customs Union
SADC	Southern Africa Development Community
SEA economies	Southeast Asian economies
SSA	Sub-Saharan Africa
TPF	Total Productivity Factor

ABSTRACT

This study looks at the relationship between financial market development and the growth of Kenya's economy. The objective of the study is to analyze the direction of the relationship between the financial market and the growth of the economy in Kenya. Economists have suggested that there is a direct association between the expansion of financial markets and economic growth. However the question has been whether the nexus is finance-led (that is finance contributes to economic growth), growth-led (financial development follows economic growth) or bi-directional. Using time series data from 1971 to 2013, the study sought to describe the direction of this relationship. The study used three proxies to describe financial market development that are Broad money (M2) to GDP ratio, Domestic credit to the private sector to GDP ratio and Interest rate spreads. Economic growth was measured using real GDP per capita.The results from the study determined that there is a bi-directional relationship between economic growth and financial development variables. Using Granger causality tests it was proven that financial market development variables; broad money, domestic credit to the private sector and interest rate spreads have a bi-directional association with economic growth. Based on the analysis the study recommended that government should implement policies that foster the growth of Kenya's financial markets so as to attain economic growth. Such policies should aim at improving financial markets in terms of depth, access and efficiency. Financial depth can be attained by enforcing monetary policies that optimize broad money growth and maintaining continuous surveillance on money level in the system but without attracting undesirable effects such as inflation. Financial access can be improved if responsible authorities promote an environment that can assist financial intermediaries to be able to exercise its function on credit creation for instance encourage lending to productive sectors of Kenya like its dynamic private sector. To increase financial market efficiency, the Central Bank of Kenya must control interest rates spreads to encourage competition within the financial market.

CHAPTER ONE: INTRODUCTION

1.1. Background of Study

The link between financial market development and economic growth has received considerable attention from researchers over the past years. Valickova, Havranek & Horvath (2013) defined financial market development as policies, factors and institutions within the financial market that lead to effective financial intermediation as well as deep and broad access to capital and financial services. Where economic growth is the year on year, increase in total productivity. Levine (1997) noted that future rates of economic growth could be projected by the state of financial market development within a nation. As financial markets develop this will eventually boost fund accumulation and technological improvements that in turn boosts savings rate, information transparency on available investments, promote efficient capital allocation and this will ultimately boost totally productivity factor (TPF) which in turn feeds into economic growth.

Economist have given divided opinions on the correlation of development of financial markets and economic growth. Robinson (1952) and Miles (2005) are some of the notable economists who proposed that financial development came after economic growth (growth-led finance hypothesis). They proposed that as entrepreneurs spurred economic activity this would eventually stimulate the financial market to develop in a bid to match activity/demand. However, some economists have proffered different opinions; Schumpeter (2008) argued that there was a direct correlation between the expansion of financial markets and economic growth: reasoning that financial intermediation service where essential for the growth of an economy therefore financial development had to occur first for the economy to grow (finance-led growth hypothesis). Schumpeter (2008)

introduced Theory of Development, in which he suggested that entrepreneur need not only require technical knowhow but would also need access to finance to access and use factors of production in producing products and services that increase the GDP. Such opinions have over the years shaped nations' policies with regards to financial market development and growth of economies.

Kenya has adopted financial development as a strategy to enhance economic growth. In the Kenya's Vision 2030, finance sector development was identified as one of the pillars to attaining prosperity of the nation, with capital market deepening and provision of financial services being flagged as the crucial developments. This study looks at the contribution made by the financial market to the growth of Kenya's economy. It analyses the relationship between the growth of the financial market and the advancement of Kenya's economy.

1.1.1. Financial Market Development

Financial market development involves the process of implementing policies, factors and institutions within the financial market which improve on financial intermediation as well as improve on access to capital (Valickova et al, 2013). The presence of a well-developed financial system has been termed as the nexus of growth in an economy. Financial markets are made of financial institutions and financial instruments. Financial institutions act as intermediaries and comprise of banks, insurance companies and investment funds. Instruments that can be found in the financial markets include equities, bonds, loans, derivatives and mortgages, which are traded in the respective markets (CFA Institute, 2016).

FitzGerald (2006) noted that development of financial markets can be attained by the establishment and expansion of institutions, instrument and markets to support investment and growth. As a financial market develops, costs will ultimately decrease for instance costs of acquiring information, enforcing contracts and executing transactions reduce from competition as the market opens up. Frankel (2000) explained that development through market liberalization subjects domestic financial institutions to the discipline of competition. Developing financial market would drive performance and innovation; for instance financial inclusion and mobile banking in an effort to provide services to the uncaptured market segment (for example the unbanked and under-banked population).

Financial market development is multi-dimensional. Pill and Pradhan (1995) stated that development can be measured by analyzing the size of financial institutions and markets (depth), extent to which people can and use financial services (access), how competent the market in intermediating (efficiency) and stability of the market. They asserted that by only using measures of financial depth such as broad money to GDP ratio to measure financial development it would paint a misleading picture, as it would fail to analyze indicators that showed financial openness and efficiency. Cihák, Demirgüç-Kunt, Feyen & Levine (2013) also contend that focusing on one proxy to measure financial markets can lead to misleading results, for instance high credit levels in an economy cannot be relied on as an indicator of access to financial services, as credit facilities can be hogged by the biggest firms and high net worth individuals.

1.1.2 Economic Growth

Economic growth is a phenomenon that occurs when people acquire resources and reorganize them in ways that are more valuable. According to Solow's model (1956), economic growth is influenced by changes in inputs (labor and capital) and technical progress. This study used real GDP as a measure of economic growth, as it determines the living standards within a country i.e. the ability of an average person to purchase goods and services.

Richard (2003) postulated that economic growth represents an imperative way for improving livelihoods and reducing poverty in developing nations. As such, economic growth has become the main emphasis on most economic policies of developing countries. Governments have focused on economic growth mainly because low levels of unemployment are associated with low growth. Levine (1997) noted that in the long-run as the activity increases in the economy, demand of labor is most likely to increase which is unlike the case in countries with stagnant GDP. High growth also denotes reduced poverty within a state. Particularly in the case of developing economies, with economic growth a government will be in a position to make meaningful and bearable poverty reduction. This will eventually lead to improved standards of living, if growth is carefully managed additional resources can be used to improve social services like health and education (Richard, 2003).

Marone (2012) explained that when it comes to measuring improved living standards, policy makers should note that progress in an economy could bypass the deprived in the society depending with the distribution of higher incomes. In addition, living standards of people improve depending on what has been produced. A nation may have fantastic

economic growth rates spurred by producing a lot of pig iron which unless processed is not actually useful: the case of The Soviet Union (1922–1991). Because of this, economists have called on the use of different indicators as a measure of economic development (Nordhaus and Tobin, 1973). Other measures that can be used include the Happiness index and the Human Development Index (HDI), which is a measure of GDP and social statistics such as literacy rates and health standards (Marone, 2012).

1.1.3 Financial Market Development and Economic Growth

There has been differing opinions concerning how financial market development interacts with economic growth. Schumpeter (2008) argued that there was a direct correlation between the expansion of financial markets and economic growth: reasoning that financial intermediation service where essential for the growth of an economy. King and Levine (1993) later supported this positive relationship and they stated that several proxies of the level of financial market development (for instance access, depth and stability) are strongly connected with real per capita GDP growth, physical capital accumulation, and improvements in capital allocation. On the other hand, Robinson (1952), Lucas (1988) and Miles (2005) believed that the finance growth relationship is immaterial. For instance, Lucas (1988) emphasized that the importance of financial markets was badly overstressed in development economics.

Even with the attention given on the association of financial development and growth of an economy, results are still not clear as to the causal relationship between the variables. However, governments have over the past years,been strengthening their financial markets in a bid to stimulate economic growth. At the sixth Convention on Cooperative Banks in Europe (2015), the European Commission emphasized the importance of a

strong financial system to make the economy strong. As such, Europe has strengthened its bank Capital Requirements Regulation and instigated regulatory initiatives that toughen supervision and regulation. Asia has been no different in its response to developing its financial systems. While Southeast Asia (SEA) financial systems can be described as relatively weak they have over the years have been growing strongly. According to the discussion paper by Shimada and Yang (2010), the SEA's equity markets have grown rapidly with the bond markets following behind. The paper sited the main vulnerabilities of the SEA economies stemming from unpredictable capital flows. The African financial markets have also been developing albeit at a slower pace. The EIB's Banking in Sub-Saharan Africa report (2013) stated that financial restructuring in a lot of sub-Saharan African nations reasonably contributed to efficiency of their financial markets and economic growth.

1.1.4 Kenya's Financial Market and Economic Growth

The economic pillar of Kenya Vision 2030 strives to advance the prosperity of Kenya. One of the sectors that would help attain this vision is the finance sector with capital markets deepening and provision of financial services being the flagship projects. Between 2005 and 2015, Kenya averaged a GDP annual growth rate of 5.47 percent between. The growth of the economy was supported by the expansion of finance, construction, industrial, information and communication technology, and wholesale and retail trade (African Economic Outlook, 2016).

Kenya's financial market can be described as reasonably well developed in comparison to other Sub-Saharan markets (Odhiambo, 2008). According to a report by the MFW4A Secretariat (2016), the fundamentals of a well-developed financial system have been put

in place in Kenya. These include improved regulation and by-laws, monitoring, competition and the establishment of the first credit rating agency in 2010.

As of 2015, Kenya's banking sector had 43 banks with over 1.100 branches and 2.200 ATMs. According to CBK's Annual report (2016) the banking sector's balance sheet recorded a 9.2% growth to Ksh. 3.5 trillion in December 2015 (previously at Ksh. 3.2 trillion as at December 2014). The micro finance industry has also been growing with institutions like Faulu Bank and Kenya Women Microfinance Bank Ltd serving the underserved and underbanked population of Kenyan.

Kenya's capital market albeit being the largest in East Africa, is fundamentally shallow and narrow.The Nairobi Stock Exchange has 66 listed companies that cover sectors from agriculture, manufacturing to service sector. The EIB's report on Banking in Sub Saharan Africa (2013) noted that the capital market had played a minor role in long-term financing and mobilization of resources of Kenya's market. The money market is somewhat active, with all 43 commercial banks being involved in the interbank money market. However, the 91-day Treasury bill remains the most frequently used instrument and therefore the money market benchmark.

Even with the recent developments in Kenya's financial sector, the market still holds untapped potential in supporting the distribution of funds and economic resources across the economy. The EIB's report (2013) described the Kenya's domestic debt market as shallow and narrow with instruments having short-term maturities, limited investor base, and government securities being the most dominate.

1.2. Research Problem

The relationship between development of the financial market and growth of a nation's economy has caught the attention of many economists. Economists have suggested that there is a direct association between the expansion of financial markets and economic growth. It is held that several proxies of financial market development (for instance access, depth and stability) are strongly connected with real per capita GDP growth, physical capital accumulation (and its use), and improvements in capital allocation (Levine, 1997; Ndebbio, 2004; FitzGerald, 2006; Schumpter,2008; Omondi, 2015).

In comparison to other Sub-Saharan countries, Kenya has managed to maintain a strong and vibrant financial sector for the past decade. According to a report by the MFW4A Secretariat (2016), the fundamentals of a well-developed financial system have been put in place in Kenya for instance increased competition, regulation, supervision and presence of a credit-reference bureau. The CBK, in its 2015 Annual report, reiterated its commitment to nurture a proper functioning and steady financial system to support economic growth. The financial sector has buoyed the economy with Kenya's economy averaging a GDP annual growth rate of 5.47 percent between 2005 and 2015.

A lot of research on the contribution of emerging financial markets to the economies of developing countries has been carried out. In his study on financial market development and economic growth, FitzGerald (2006) noted that through expansion of financial markets (institutes and instruments) the investment and growth process would most likely be positive. Financial development backs the investment process by bringing together national and foreign savings for companies; ensuring that monies are efficiently

allocated, spreading risk and providing liquidity for operations. Evidence of such a notion has been proved by Rousseau and Watchel (2008), Shimada and Yang (2010), Allen and Ndikumana (2010).

Research has also been undertaken in Kenya to establish the relationship between financial development and economic growth. Odhiambo (2008) established that financial market development unambiguously led to the growth Kenya's economy (demand-following response). Ngugi, Amanja and Maina (2010) regressed the GDP growth model and recognized a substantial direct relationship between capital market deepening and growth of the economy. Omondi (2015), Ndalu (2011) and Bakang (2016) supported their findings in later studies.

While the respected norm is that the presence of a vibrant financial sector, with active stock and bond markets, sound banks, reputable insurance companies, encourages economic growth other scientist have disputed that notion (Miles, 2005 and Robinson, 1952). In light of these contrasting views, this study seeks to determine the correlation between the financial market of Kenya and its economic growth - whether the relationship is finance-led, growth-led or bi-directional relationship. Most studies have focused on the capital markets and banking sectors of developing economies within South America, Southeast Asia, and the Caribbean. Africa, with a focus on Kenya, has not received the same attention other countries have received in academic literature. This study will take a homogeneous approach and therefore attempt to understand Kenya's own financial market correlation with economic growth.

1.3. Objective of Study

To determine the relationship between financial market development in Kenya and the growth of its economy.

1.4. Value of Study

Findings from this study will help financial sector regulators and government officials to know the sensitivity of the financial market to the economic growth of this country. The economic pillar of Kenya Vision 2030 strives to advance the prosperity of Kenya. One of the sectors that would help attain this vision is the finance sector with capital markets deepening and provision of financial services being identified as the flagship projects. Because of getting to know the effect of financial market development, responsible authorities will be able to put in place carefully thought out policies to help drive economic growth and attain Kenya's vision.

The study will also add on more insight to existing literature. Researchers and academics can use the study to garner further understanding on financial market development and economic growth with a focus on Kenya. Developmental institutions, supranational organizations and investors can also make use of the study findings to encourage efficient fund allocation to most productive uses and drive investment and the growth process of Kenya.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This segment of the study examines academic research carried out on the relationship between financial market development and economic growth. It concentrates on analyzing data concerning theoretical and empirical theories on the topic.

2.2. Theoretical Review

The theory of financial market development being essential for economic growth can be traced back to Schumpter's Theory of Development (2008). In this theory, it was noted that an efficient credit system could not be disassociated from innovation and entrepreneurial action. The theory laid the groundwork to Harrod – Domar Theory (1946) which expressed that economic growth is a function of policies that stimulate direct investment through increasing savings. The Solow model (1956) was introduced later and it suggested that economic growth is a product of changes in inputs (labor and capital) and technical progress.

2.2.1.Theory of Economic Development

In 1911, Schumpeter developed the Theory of Economic Development in which four important features were noted as crucial for economic development - circular flow of economic activity, entrepreneur role in initiating development, business cycle and end of capitalism. Under the entrepreneur roles, it was suggested that entrepreneur need not only require technical knowhow but would also need access to finance to acquire and use factors of production in producing products and services that increase the GDP. The development of a financial market would lead to the presence on an efficient credit system from which entrepreneurs would access capital for economic activities that would

spur economic growth. Schumpeter explained that capital was essential as a lever by which innovative entrepreneurs could gain access to goods and services that he needs, divert these factors of production to new uses or dictate a new direction to production (Croitoru, 2012).

The theory has been influential with notable economists using it in modern day literature formulation (King and Levine, 1993; Odhiambo, 2008; and Maina, 2011). King and Levine (1993) made use of data covering 80 countries over the 1960-1989 period to support Schumpeter's theory in their discussion paper titled Finance and Growth. The two researchers were able to present cross-country evidence confirming Schumpeter's proposition that financial development can stimulate economic growth.

2.2.2. Harrod–Domar Theory

Harrod (1939) and Domar (1946) developed this model to explain how the level of saving and productivity of capital could describe a nation's economic growth rate. The model expressed that economic growth is a function of policies that stimulate direct investment through increasing savings and expending those funds efficiently. The notion is that as long as there is enough labor supply, national income growth is dependent on capital injection. The Domar model introduced the accelerator principle to explain investment in an economy: that is investment is proportionate to output.

However, the model had a weakness in that it assumed a similar growth rate between investment and output. Such a growth rate would only be attained if firms anticipated the GDP growth rate and adjusted their investment to achieve it, an impossible feat that economists have labelled a happy accident (Adhikari, 2011 and Greiner, 2008). Blume and Sargent (2014) remarked that the Harrod – Domar model laid groundwork for future

developments in theory formulation. They emphasized that the theory acted as a signpost on the road, which was indicating the direction that modern economic analysis would take (Blume and Sargent, 2014). The Solow-Swan model was built mainly from the foundation of this theory.

2.2.3. Solow–Swan Model

According to Solow's model (1956), economic growth is influenced by changes in inputs (labor and capital) and technical progress. Solow's model can be mathematically expressed as:

$$Y = AF\ (L, K),$$

where Y is the level of economy's total output; L is the labor supply, K the physical capital stock or structures and tools used for production of goods and services, and A represents technology advances.

The Solow-Swan model made incredible implications for policy formulation. For instance, Gundlach (2005) highlighted that developing economies should not only be advised nor concentrate on investment only without giving due regard for technology and incentives. The Solow-Swan model concluded the economic growth rate was not only dependent on the savings rate but also reliant on technical progress within the nation. It also suggested that where technological improvements ceased, output per worker would eventually cease because of diminishing marginal returns.

2.3. Determinates of Economic Growth

It must be pointed out that economic growth of a nation is not only influenced by financial market deepening. Other myriad of factors have an impact on growth of the

economy and these are discussed in this section. The neoclassical model / Solow model (1956) captured three determinants for economic growth (labor supply, physical capital and technology) however, natural resources shall be analyzed in addition.

2.3.1 Labor Supply

Supply of labor is a major determining factor for economic growth. The labor force is defined total number of individuals who are employed or are actively looking for employment (Manacorda, 2011). Advanced economies like Japan, Europe and the US economy have benefited from a growth in the number of people available for work.

As the quantity of workforce increases business will take on cheap labor and this gives export businesses a competitive edge. Bloom (2003), a Harvard demographer introduced the term 'demographic dividend' to explain the benefit enjoyed by a nation when its young labor force grows faster than the retired force and dependent children.

2.3.2. Physical Capital Stock

Physical capital stock refers to the equipment and structures used to produce goods and services (Nehru and Dhareshwar, 1993). It consists of business investments in buildings, machinery and equipment. Amassing physical capital stockis critical as it provides the workforce with tools necessary for production.

To illustrate its importance - if labor supply goes on increasing while there is no net capital accumulation taking place, then the growing population would not be able to get hold of necessary tools, machines and other means of production, this would therefore diminish their capacity to produce. Over the years, China has committed over 40% of its income to investment spending. Between 1991 and 2009, China averaged an annual real

GDP growth of 10.2%, which was backed by high investment spending on factories, equipment and infrastructure (CFA Institute, 2016).

2.3.3. Natural Resources

The economic definition of natural resources is materials that are naturally occurring examples include land, mineral deposits, water and forests (Barbier, 2003). Such resources are critical inputs to production and growth. Countries in the Middle East have benefited greatly from natural resources. For instance, the UAE, Saudi Arabia and Kuwait are the largest economies in the region together with large pools of oil. Among the Global Growth Generating countries (3G countries), Nigeria is noted for its high growth potential because of its diversified economy and abundant natural resources. It ranks 6th worldwide in farm output and it has proven oil reserves estimated to be 35 billion barrels.

However, it must be noted that even though natural resources are important, a country can still attain high GDP growth as long as it can acquire the essential inputs through trade – the case of the Japanese and South Korean economies.

2.3.4. Technology

Technology refers to machinery and devices developed from scientific knowledge (CFA Institute, 2016). Developed countries such as the United States have developed enormously due to technological advances.The Solow model (1956) included technology as a major determinant of long run growth of an economy.

If an economy was to exclusively rely on growing its economy by expanding inputs and/or factors of production it would face limits because of diminishing marginal returns: technological advancement allows the country to override such limits. As such most

government have expended costs on the information technology sector, research, development, and acquisition of new technology in order to increase productivity and national income.

2.4. Empirical Review

Empirical research has confirmed a relationship between growth of financial markets and economic advancement. Such research has been conducted on an international scale by researchers such as King and Levine (1993), Allen and Ndikumana (1998) and Rousseau and Wachtel (2008). Local researchers have also carried studies to determine the link between economic growth and financial development in Kenya. The studies shall be reviewed below.

2.4.1. International Review

Allen and Ndikumana (1998) studied the role of financial intermediation in an economic union, and so targeted the Southern African Development Community (SADC). Their research compared data of financial intermediation indicators using three different analytical models: regressions including country-specific fixed effects, regressions including a high-income dummy and simple OLS regression (forcing a common intercept for all countries). Results from the study indicated a positively correlated connection between increased financial intermediation and the growth rate of real per capita GDP. However, the study had faults in that it failed to recognize the heterogeneous nature of the SADC economies and it assumed Southern African Customs Union (SACU) countries were highly integrated because of the monetary union among member.

Ndebbio (2004) carried out a study to establish the connection between financial depth and growth from selected sub-Saharan African countries. His study attempted to use broad money (M2), treasury bills, liabilities of non-bank financial assets, market capitalization and money market funds to define financial depth, but unfortunately such a definition failed to capture a good deal of SSA countries as most of them have narrow and shallow capital markets. Instead, his study made use of broad money and GDP, the data of which was interpolated through an ordinary least square (OLS) multiple regression model. Results from the study indicated that financial deepening as represented by broad money positively affected per capita growth of output.

Aziakpono (2004) carried out a research to answer whether local financial institutions where relevant in stimulating growth of economies with a monetary union. The study used the experience of the SACU member (Botswana, Lesotho, Namibia, South Africa and Swaziland) and the Common Monetary Area (SACU with the exception of Botswana). Aziakpono concluded that local financial intermediation was important in such financially integrated unions. As a side note, the study indicated that smaller economies within monetary unions should build up their financial systems and solve operational and institutional problems in their local market if they were to derive ideal gains from financial intermediation.

Rousseau and Wachtel (2008) later carried out a follow up study on the influence of financial development on the growth of 84 economies. They came to the conclusion that though there still is a positive correlation between the variables, the relationship was no longer as strong in more recent data (1960 to 2004) compared to data from 1960 to 1989. They put forth a hypothesis that sought to explain the diminishing correlation between

financial development and growth. Rousseau and Wachtel (2008) deduced that the financial crises, which occurred within the recent years, might have dampened the effect of financial deepening. It was noted that accelerated financial deepening or growth of credit might have weakened banking systems thereby giving rise to growth inhibiting financial crises. In conclusion, the authors recommended that in order for financial development to have a greater impact on the economy, it must be accompanied by appropriate policies for financial sector reform and regulation.

Valickova, Havranek and Horvath (2013) conducted a meta-regression analysis on 1334 estimates from 67 studies to gain a deeper understanding on the impact of financial development to economic growth. By combining the results from the 67 published studies, Valickova et al (2013) where able to establish a positive and significant effect between financial development and economic growth. They also suggested that capital markets in particular stock markets supported higher economic growth rates compared to other financial intermediaries. The advantage of the study was that by using estimates from the 67 studies the results could be generalized to a larger population with improved precision and accuracy because of the large data set.

2.4.2. Local Review

Odhiambo (2008) tested the direction of correlation between financial market development and economic growth in Kenya by employing the Granger causality model. The study made use of the broad money to gross domestic product (M2/GDP) ratio, the ratio of currency to narrow definition of money (CC/M1), and the matrix of bank claims on the private sector to nominal GDP (DCP/GDP) ratio for analysis. Odhiambo (2008)

concluded that the causal relationship between financial market development and economic growth was dependent on the proxy chosen for financial development. A bi-directional causality relationship was found to be present when using the M2/GDP ratio. The other measures indicated a demand-following relationship. His study concluded that overally a growth in the real sector prompted the growth of the financial system by encouraging active participation in the markets.

Ngugi, Amanja and Maana (2010) carried out a research to establish whether the financial deepening and in particular the capital market had a positive relationship with economic growth within Kenya's context. By regressing the GDP growth model, their study concluded that there was a substantial connection between economic growth and the capital market. It was noted that Kenya's financial market sophistication, access and availability of venture capital were considerably significant. However, they did point out that other factors such as infrastructure development, human capital, legal and regulatory issues made an impact on Kenya's economy.

To capture different aspects of the financial market, Ndalu (2011) studied the impact of financial deepening in the insurance industry and economic growth in Kenya. He noted that the role of the insurance sector (indemnification and risk pooling) assisted commercial transactions such as credit provision by mitigating losses as well as provide information on management of systematic risk therefore spurring on economic activities. By employing a causal design, Ndalu (2011) could conclude that a unit increase in the insurance penetration ratio (gross premium income as a percentage of gross domestic product) led to a corresponding increase in the growth rate of Kenya. Nonetheless, the findings have their shortcomings as the data used by Ndalu for analysis spanned a short

period (only six years). The study needed more data for the results to be at least reliable and paint a more accurate picture.

Bakang (2015) conducted a study to investigate the impact of financial market deepening on economic growth in Kenya. He concentrated on the banking sector developments as a proxy of financial deepening and therefore used liquid liabilities, credit to the private sector, commercial bank assets and commercial bank assets as financial variables. Using the Johansen Jeluisus cointegration test, Bakang (2015) was able to conclude that the banking sector in Kenya played an imperative part in the process of growing the economy. However, Bakang's study was marred by the fact that it only captured the banking sector as a determinant of financial development while ignoring other segments such as insurance, capital and money market within the financial market.

2.5. Conceptual Framework

The study has two main variables which are financial development and economic growth. Financial development will be the independent variable while economic growth is treated as the dependent variable. The relationship can be represented as

$$Y = f\ (FMD)$$

Y is the economic growth as denoted by the real GDP.

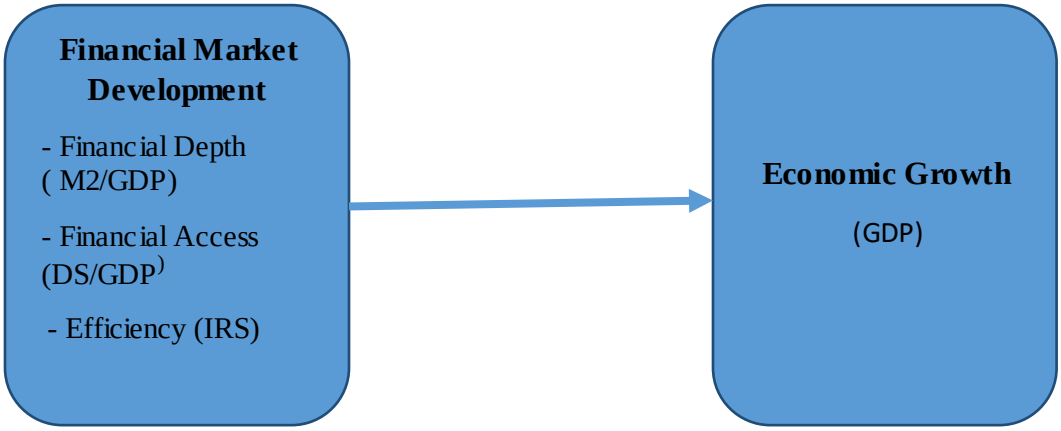
FMD is the financial market development. Financial market development will be studied from three perspectives; depth, access and efficiency.

Financial depth, that is variety of financial assets in the economy (Ndebbio, 2004), is represented by broad money to GDP ratio (M2/GDP)

Financial access represents the access that people have to formal financial services such as credit, insurance and monetary transfer services (IFC, 2013). It is measured by domestic credit to private sector as a percentage of GDP (DS/GDP).

Efficiency is the adeptness with which funds are correctly allocated among competing uses at a point in time (Woodford, 2002). It is denoted by interest rate spreads.

Figure 1.1. Diagrammatic Representation of Conceptual Framework



2.6. Summary of Literature Review

The chapter explored theories on financial development and economic growth. Already existing theories point to the notion that financial markets are imperative to the growth of an economy. If a country were to develop its financial markets, it would facilitate access to funding which would stimulate economic growth. The empirical literature has over the years sought to establish the nature of the relationship between financial development and economic growth. The question has been whether the nexus is finance-led (that is finance contributes to economic growth), growth-led (financial development follows economic growth) or bi-directional. King and Levine (1993) determined a finance led growth

relationship. While Odhiambo (2008) discovered a growth led finance relationship between the variables. In light of these contrasting views, this study seeks to determine the correlation between the financial market of Kenya and its economic growth.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

The chapter outlines the methodology which was undertaken. It describes the research design implemented in the research, data that was used for simulation, data collection methods and analytical methods employed.

3.2. Research Design

Research design is a plan which outlines the approach that will be employed for collecting and analyzing data (Chisimbili, 2015). A correlation research design was adopted for the study. Correlation research seeks to investigate how variables interact with each other.The purpose of the study was to describe how financial development is interrelatedto the growth of Kenya's economy. It sought to analyses whether the relationship is finance-led, growth-led or bi-directional relationship. The researcher found the design suitable because such a design has been by past researchers such as King and Levine (1993), Odhiambo (2008), Allen and Ndikumana (1998) and Maina (2011).

3.3. Data Collection

Data collection is the systematic process of gathering information on variables of interest. The study utilized secondary data that is; data previously collected by someone else for another primary purpose (Johnston, 2013).The study has two main variables that are financial market development and economy growth. Data for the analysis of financial market development was obtained from the Nairobi Securities Exchange, World Bank Database and Central Bank of Kenya reports. Data on economic growth was sourced from the Kenya National Bureau of Statistics and the United Nations statistic department. The research used time series data with annual data collected from the period 1971-2013.

3.4. Data Analysis

The study used linear regression analysis to establish the relationship between the variables. Economic growth, which is the dependent variable, was analyzed looking at the real Gross Domestic product (GDP). Financial market development was studied from three perspectives - depth, access and efficiency. Financial depth is represented by broad money as a percentage of GDP. Financial access is characterized by domestic credit to private sector as a percentage of GDP (DS/GDP). While efficiency was denoted by interest rate spreads. The analysis model is represented by the following equation:

$$Y = f\ (FMD) = \alpha_0 + \alpha_1 M2 + \alpha_2 DS + \alpha_3 IRS + \varepsilon$$

The variables are defines as:

Y is the economic growth as denoted by the GDP per capita.

FMD is the financial market development. Development of the financial market can be further broken down as

DS is domestic credit to private sector as a percentage of GDP (DS/GDP). Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment.

M2 is broad money to GDP ratio (M2/GDP). Broad money is the total of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper.

IRS is the interest rate spread. Interest rate spread is the difference between the lending rate charged by banks on claims to customers and the deposit rate paid by financial institutions for demand, time, or savings deposits.

ε - Represents the error term i.e. deviations of the observed values of GDP from the mean

3.4.1 Test of Significance

The study will employ an F-test (One-Way Univariate ANOVA); this will test for differences between the variances of economic growth (as represented by GDP) and financial development (as represented by DS, IRS, and M2). The coefficient of determination, R^2, will measure how much variation in GDP is explained by a variation in FMD.

3.5 Diagnostic Tests

3.5.1 Normality

Normality tests shall be conducted to assess whether the data set normally distributed and calculate the probability for a random variable underlying the data is likely to be normally distributed. Gujarati (2003) described a normal distribution as one that is not leptokurtic (too steep/vertical), platykurtic (too flat) nor skewed (either positively or negatively). The Bera--Jarque test will be used to test the regression residuals for normality. The test will use the mean and the variance – assuming that these statistics characterize the properties of a normally distribution. A normally distributed data set should have skewness equal to zero (0), kurtosis of three (3) and the Bera--Jarque test statistic be equal to zero (Brooks, 2008).

3.5.2. Stationarity Test

A stationary data series is a data set with a constant mean, variance and auto covariance. It is important to test for stationarity as its presence or absence has a strong impact on the data's behavior and properties for instance if data in the model is non-stationary data this can result in false regressions (Brooks, 2008). The study will use the Augmented Dickey Fuller Test (ADF) to test for stationarity. This simple autoregressive model will examine for a unit root (i.e. shocks that persist in the system and never die away but accumulate to cause non-stationarity problems) in the time series sample (Brooks, 2008).

3.5.3. Granger-Causality Test

The Granger-Causality Test is useful for assessing whether the data set on financial development (FMD) is useful in forecasting economic growth (EG). A variable is said to have a granger cause effect on another variable if it can be used to make a more accurate prediction of the other variable than if only the past data of the latter was used as predictor (Zou, Ladrou, Guo, & Feng, 2010). This test also gives information about the short-term relationship between the variables. Three possible scenarios can arise using the Granger Causality test; one way causality either from FMD to EG or EG to FMD; opposing or contradictory direction and an independency the variables.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. Introduction

This chapter presents results from the analysis of data also the interpretations of the said results. Descriptive statistics was presented first; this included the means, standard deviations, and skewness of the study variables. The second section will be a discussion of the correlation analysis, which gives the levels of association between the variables. The third section will contain an interpretation of research findings.

4.2. Data Validity

4.2.1. Normality Test

Table 1: Normality Test

Variable	Skewness	Excess Kurtosis	Jarque-Bera
GDP	1.51	4.3	19.3
DS	0.54	1.74	2.80
M2	0.03	2.36	2.85
IRS	0.55	2.16	3.14

Skewness is a measure of the level of symmetry in the data set, a normal distribution will have a skewness of zero implying that its mean and median are equal and the variable is fully described by its mean and variance. From Table 1, all the variables except M2/GDP are positively skewed that is if sketched on a graph it has a long tail on its right side and the mean is greater than the median that is greater than the mode. M2/GDP has a skewness close to zero indicating that the variable is near a normal distribution. Kurtosis is a measure of how peaked a data set is, for instance data may be crowded around the mean (have a high peaks). Normal distributions have an excess kurtosis equal to zero; as

shown in Table 1, all of the study variables have an excess kurtosis greater than zero indicating they are leptokurtic distributions. Leptokurtic distributions are more peaked indicating there is a higher likelihood of small deviations from the mean.

4.2.2. Stationarity Test

From Table 2 below, the ADF test statistic for domestic credit to private sector and broad money is greater than critical value at 5% level meaning the test does not reject that the null hypothesis that the variables have a unit root. Therefore, the variables are non-stationary and for purpose of analysis, the study had to difference the variables at the first level. The test rejected the null hypothesis that GDP and IRS have unit root therefore these variables were stationary and there could be used in analyses without differentiating.

Table 2: Stationarity Test

	ADF test statistic	Test critical value at 5% level	Probability
GDP	-3.62	-2.93	0.01
DS	-0.78	-2.95	0.00
M2	-1.32	-2.95	0.00
IRS	-3.53	-3.06	0.02

4.3. Descriptive Data Analysis

Descriptive statistics is carried out in order to summarize data effectively and describe the essential aspects of data sets such as mean, standard deviation etc. Table 3 below shows the descriptive data analysis. Economic growth as measured by GDP per capital has averaged $464 from the period 1971-2013. Broad money as a percentage of GDP has a mean of 33% over the 43-year period. On average, interest rate spreads are 7.86% while

domestic credit to the private sector to GDP ratio has a mean of 22%. The standard deviation measures how data is dispersed around the mean. From Table 3, the variables have small deviation values, with the exception of GDP that has higher standard deviations, indicating how less variable they are most likely to be. Table 3 below gives the descriptive statistics for all variables in the study.

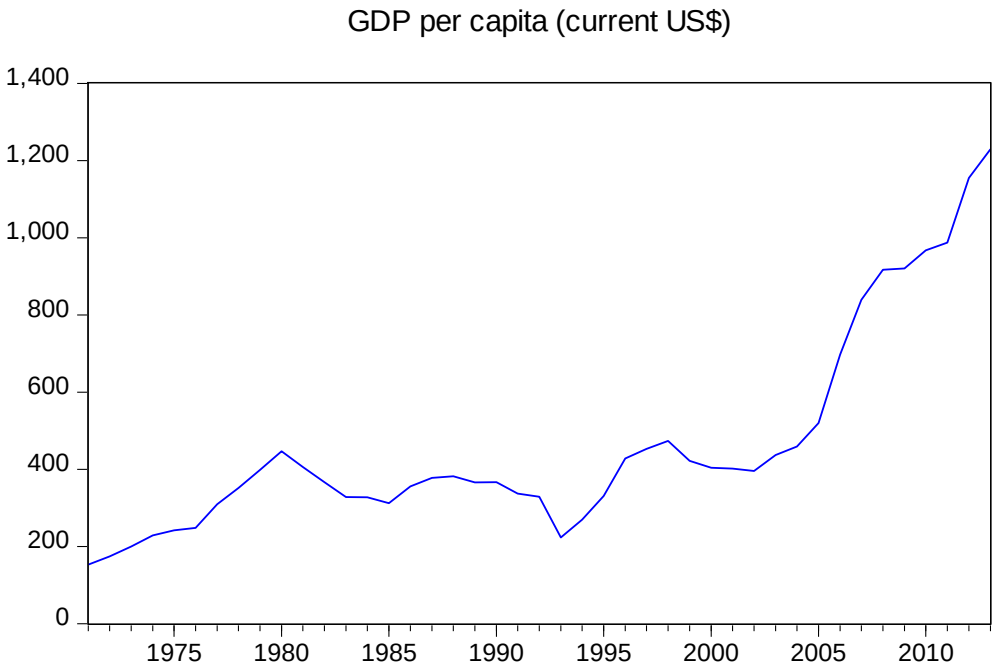
Table 3: Descriptive Statistics

	GDP per capita $	Broad Money as % of GDP	Domestic credit as % of GDP	Interest rate spreads %
Mean	463.51	33.84	22.17	7.59
Median	382.02	34.60	21.68	5.5
Maximum	1229.11	42.23	31.71	16.20
Minimum	152.55	27.71	16.49	2.30
Std. Dev	264.01	4.68	3.98	3.95
Observations	43	43	43	43

4.3.2. Graphical Analysis

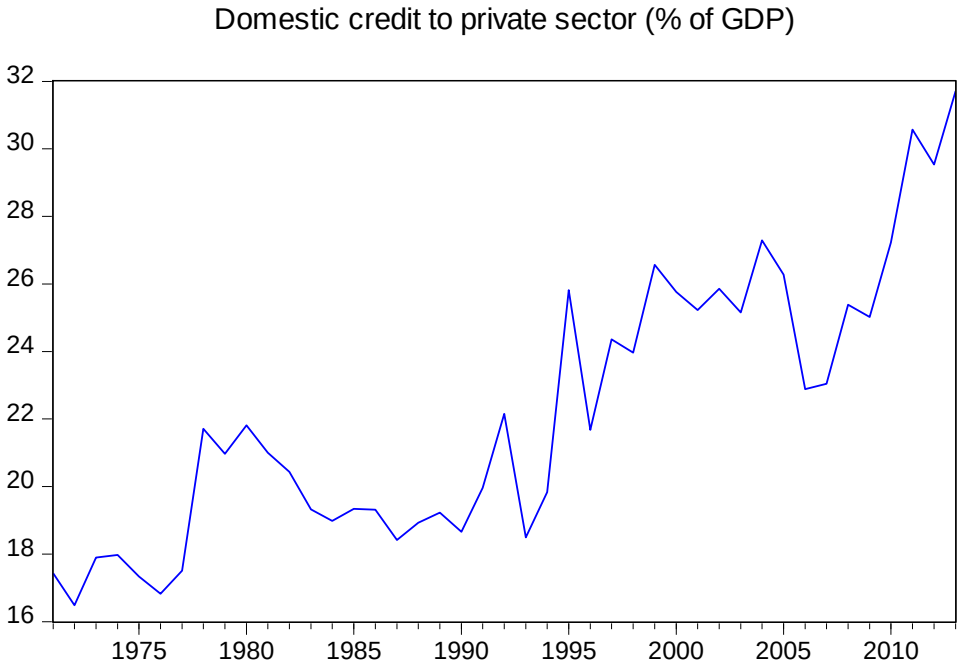
Graphical analysis was carried out to determine the trends and movements in the variables as they progressed through time. Figure 2 shows the trends in GDP per capita, figure 3 presents movements of domestic credit to the private sector as a percentage of GDP, figure 4 illustrates the trend of broad money to GDP ratio while figure 5 depicts interest rate spreads.

Figure 2: Trends in GDP per Capita



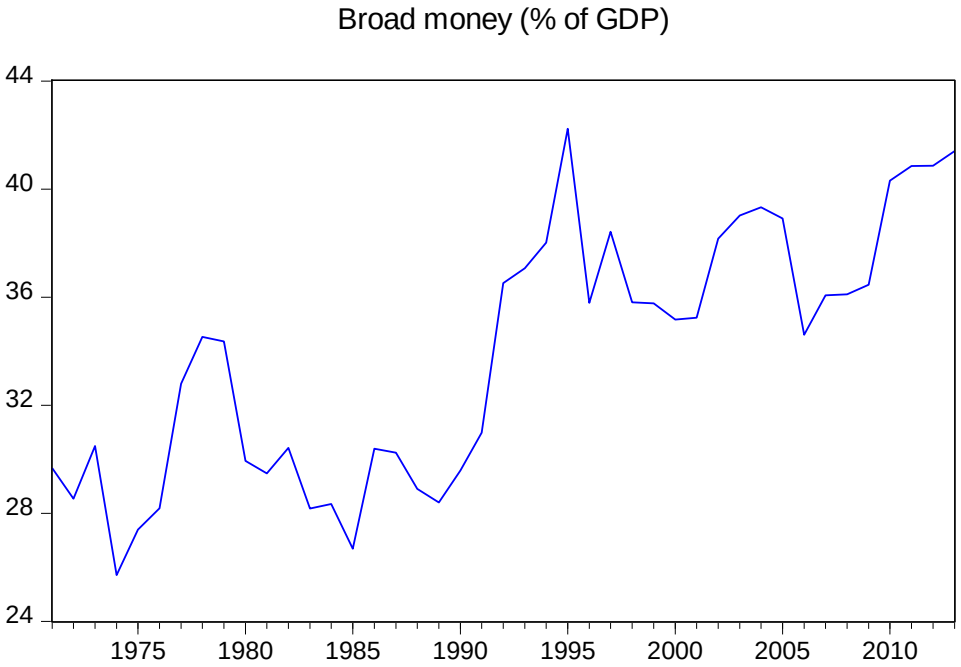
GDP per capita has been cumulative as time passed. Kenya's GDP improved from 2004/2005 due to economic reforms instituted by the government. There was slow growth between 2007 and 2009 mainly caused by the political instability. The economy has however picked up in its GDP per capita since 2010.

Figure 3: Trends in Domestic Credit to the Private Sector to GDP ratio



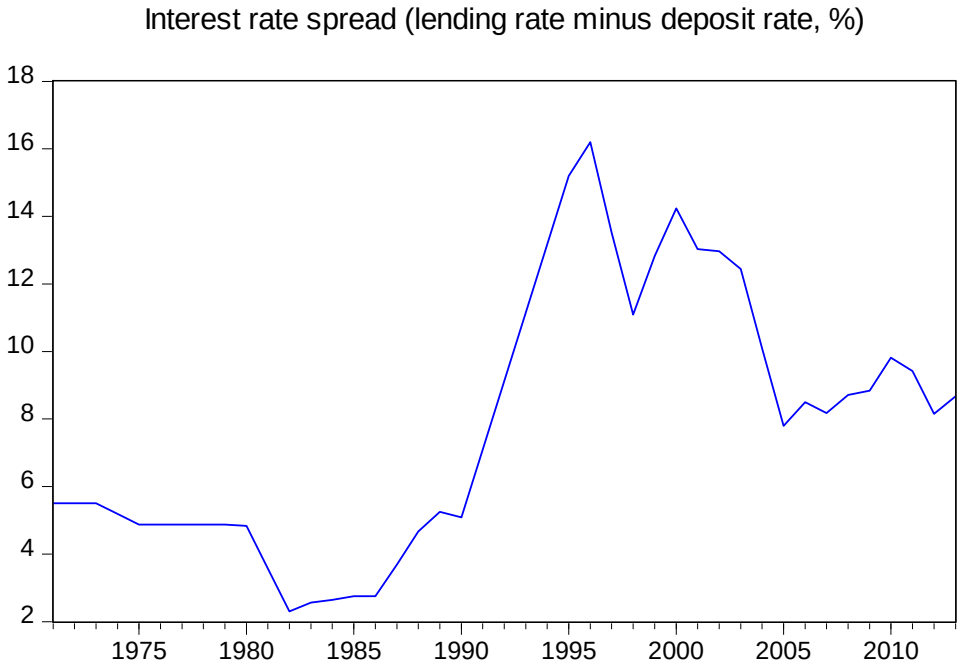
Domestic credit to private sector as a percentage of GDP is shown as highly volatile over the four-decade period. While having sharp peaks and drops over the years, domestic credit has been cumulatively increasing indicating that application of credit to the private sector has been accumulating.

Figure 4: Trends in Broad Money to GDP ratio



Broad money to GDP ratio dropped sharply from 1973 to 1974 but later hiked sharply from that year to 1979. Thereafter broad money was seen to fluctuate as central bank sought to control it through its monetary policies. The general image depicts broad money increasing overally over the 40-year period.

Figure 5: Trends in Interest Rate Spreads



Interest rate spreads where low from the period 1971 to 1990. This was later met with a sharp increase in interest rate spreads mainly caused by the liberalization in the banking sector. From 1995 to 2013, the spread has been reduced implying stricter oversight by the Central Bank of Kenya in a bid to increase efficiency in the sector.

4.4 Correlation Analysis

Correlation is a measure of how the independent (FMD variables) and dependent variable (GDP) associate with each other. A correlation of zero implies absence of any linear relationship, while any value greater than zero depicts positive linear association and correlation less than zero means an inverse/negative relationship. Table 4 shows the correlation levels of the study variables.

Table 4: Correlation Analysis

Covariance Analysis: Ordinary

Sample: 1971 –2013

Included observations: 43

Correlation	GDP per Capita	Broad Money	Domestic Credit	Interest Rate Spreads
GDP per capita	1			
Broad Money	0.67	1		
Domestic Credit	0.77	0.9	1	
Interest Rate Spreads	0.27	0.74	0.65	1

From Table 4, domestic credit to private sector (DS) has the highest positive correlation of 0.77 indicating a strong positive linear relationship with economic growth (GDP). Broad money has a fairly positive correlation with GDP of 0.67. Interest rate spreads is positively correlated with GDP albeit having the weakest association of 0.27.

4.5. Regression Analysis and Hypothesis Testing

Table 5 below shows the results from the regression analysis and hypothesis testing. To measure the goodness of fit of the model the coefficient of determination (R-squared) was calculated. The R-squared is an arithmetic measure of the closeness of data values to the fitted regression line. A coefficient of determination of 100% would show that the model is suitable for the data.

Table 5: Regression Analysis

Dependent Variable: GDP per capita

Method: Least Squares

Sample: 1971 – 2013

Included observations: 43

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Broad Money	12.31	13.77	0.89	0.37
Domestic Credit	58.22	14.25	4.08	0
Interest Rate Spreads	-32.12	9.49	-3.38	0

R-squared	0.7
Adjusted R- squared	0.68
S.E.of regression	154.35
Sum squared resid	833807.4

Model Summary

Groups	*Count*	*Sum*	*Average*	*Variance*
Column 1	43	953.3392	22.17068	15.81439
Column 2	43	1455.291	33.843977	21.92925
Column 3	43	337.3625	7.8456404	15.48608
Column 4	43	19930.79	463.50666	69700.97

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	6321341.98	3.00	2107113.99	120.83	0.00	2.66
Within Groups	2929676.30	168.00	17438.55			
Total	9251018.28	171.00				

The model obtained an R-squared value of 70% indicating the regression line reasonably fits the data. To adjust for a higher number of independent variables spuriously leading to a high R-squared, the Adjusted R-squared was also calculated and it gave a result of 68%. The financial development variables had positive coefficients with the exception of interest rate spreads.

The ANOVA test was also conducted to get deeper understanding of the regression model. The test had a null hypothesis that the variables had a slope coefficient of zero (that is there is no relationship). The null hypothesis is rejected as the model has an F value of 120.83 that is above zero. The probability is 0.00 which is below the level of significance (0.05) this implies that the lowest level of significance at which the alternative/null hypothesis is rejected is essentially zero.

4.6. Granger-Causality Test

From the Granger Causality test results in Table 6 below, it can be deduced that there is a two-way association between Broad money and GDP per capita; Domestic credit to the private sector and GDP per capita; and Interest rates spread and GDP per capita. The financial development variables (M2, DS and IRS) have a granger cause effect on

economic growth (GDP per capita) and simultaneously economic growth has a granger cause effect on the variables

Table 6: Granger-Causality Test

Null Hypothesis	Probability value	Interpretation
M2 does not Granger cause GDP per capita	0.14	Do not reject H_0
GDP does not Granger cause M2	0.39	Do not reject H_0
DS does not Granger cause GDP per capita	0.42	Do not reject H_0
GDP does not Granger cause DS	0.07	Do not reject H_0
IRS does not Granger cause GDP per capita	0.77	Do not reject H_0
GDP does not Granger cause IRS	0.42	Do not reject H_0

4.7. Discussion of Results

In general, the predictor variables (FMD variables) demonstrated considerable explanatory power in explaining the GDP per capita. The regression model produced a coefficient of determination of 0.7 and adjusted R squared of 0.68. Thus financial market variables where able to explain 70% of the systematic variations in GDP per capita. This would ultimately mean that other determining factors of growth that have been identified in models such as Solow model (1956) may have a contributing factor. Examples of such variables are human capital, technology and natural resources (Barbier, 2003; Bloom, 2003)

Domestic credit to the private sector as apercentage of GDP was found to have a positive coefficient and correlation. The implication made is that there is direct association between domestic credit to the private sector and economic growth as measured by GDP

per capita. This indicates the application of credit may have been significantly productive in the sectors of Kenyan economy. In as much as non-performing loans have a detrimental effect, financial intermediaries were able to exercise its function on credit creation. The Granger cause test indicated that there is a two-way relationship between the variables implying that if credit is given to productive sectors of Kenya's economy like the private sector, the economy would respond by growing and at the same time if the economy where to develop, the private sector would benefit from increased line of credit and access.

Broad money had a positive coefficient implying that there was a direct association between M2 and GDP however, the coefficient was insignificant. Correlation between the variables was also found to be positive supporting the idea that levels of broad money circulating do affect economic growth in Kenya. The Granger cause test showed that there is a bi-directional granger cause effect between M2 and GDP per capita therefore as broad money increases it would influence economic growth; simultaneously as the economy grows levels of broad money in circulation are inevitably affected. This would align with the quantity theory of money which states that as broad money increases over time this increases inflation and therefore an increase in broad money will not necessarily translate to increased economic output and growth.

A two-way causal relationship is existent between interest rate spread and GDP per capita thus both have a granger cause effect on the other variable. Association between the two variables was also found to be weak with a correlation value of 0.24. The coefficient of interest rate spreads is negative when regressed on economic growth. This agrees with the notion that high interest rate spreads pose a constraint to the development of private

sectors, as high spreads do not encourage debtors like investors from borrowing which leads to reduced investment in the private sector. Hence the consistent involvement of the Central Bank of Kenya in keeping the spread low as presented by an average IRS of 7.8% over the past four decades.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter gives a summary of the study objectives, findings and conclusion from the data analysis, and recommendations established from these results.

5.2. Summary of Findings

The study set to examine the correlation between the financial market of Kenya and its economic growth - whether the relationship is finance-led, growth-led or bi-directional relationship. Financial market development was looked at from three perspectives, efficiency (as represented by interest rate spreads, IRS), access (measured by domestic credit to the private sector to GDP ratio, DS/GDP) and depth (measured by broad money to GDP ratio, M2/GDP). Economic growth was analyzed looking at the GDP per capita as an indicator.

Descriptive statistics such as mean, standard deviation, kurtosis and Bera-Jacque where employed to describe the variable's properties. Diagnostic tests where then used to ascertain the goodness of the model and data in order to establish validity of results, such tests included stationarity, normality and granger cause test. From the tests it was assumed that the variables where leptokurtic and positively skewed thus both financial development and economic growth variables did not assume a normal distribution. The study had to difference the variables at the first level to account for non-stationarity.

The regression model produced a coefficient of determination of 0.7 implying that financial market variables where able to reasonably explain 70% of the systematic

variations in GDP per capita. Correlation of financial development variables with economic growth was positive indicating that the two variables moved in tandem.

The Granger Causality test construed that there is a two way relationship between economic growth and the financial market development variables; broad money, domestic credit to the private sector and interest rate spreads. Thus both variables have a granger cause effect on the other variable.

5.3. Conclusions

From the model, the study is able to conclude that financial development as measured by interest rate spreads, broad money and domestic credit to the private sector, has a relationship with economic growth. In general, regression model was able to explain the relationship between the two variables. The predictor variables (FMD variables) demonstrated considerable descriptive power in explaining systematic variations in the GDP per capita. Broad money and domestic credit to the private sector have a positive correlation coefficient implying that there is a strong strength of association and positive linear relationship between the variables and economic growth. While interest rate spreads has a weak but positive linear relationship with economic growth.

It has been determined that there is a bi-directional relationship between economic growth and financial development variables. Using Granger causality tests it can be proved that financial market development variables; broad money, domestic credit to the private sector and interest rate spreads have a granger cause effect on economic growth.

Based on the results of the model, we can draw a conclusion that financial market development has a positive association with the growth of an economy. The results

support the findings of Bakang (2015), Ndebbio (2004), Odhiambo (2008), Rousseau and Wachtel (2008). As financial markets develop this will eventually boost fund accumulation and technological improvements that in turn boosts savings rate, information transparency on available investments, promote efficient capital allocation and this will ultimately boost totally productivity factor (TPF) which in turn feeds into economic growth.

The results support the theory of bi-directional causality that postulates that financial markets have an impact on economic growth, with the opposite being true that economic growth also influences financial markets. If a nation were to develop its financial market, the ease of access to funding, availability of a variety of financial instruments and improved financial intermediation would increase investments and have a ripple effect of stimulating economic growth. In addition, if the nations sectors are to develop for instance agriculture, manufacturing and provision of social services this should simultaneously spur economic activity that will eventually stimulate the financial market to develop in a bid to match activity/demand within the economy.

5.4 Recommendations

The economic pillar of Kenya Vision 2030 strives to advance the prosperity of Kenya. One of the sectors that would help attain this vision is the finance sector with capital markets deepening and provision of financial services being identified as the flagship projects. The positive association between financial markets and economic growth in Kenya is consistent with past literature on development and finance. In response, government should implement policies that foster the growth of Kenya's financial

markets. Such policies should aim at improving financial markets in terms of depth, access and efficiency.

Policy makers can attain financial depth by enforcing strategies that optimize broad money growth but without attracting undesirable effects such as inflation. The quantity theory of money states that as broad money increases over time inflation also increases and therefore an increase in broad money will not necessarily translate to increased economic output and growth. In light of such knowledge, the Central Bank of Kenya can implement monetary policy with a focus on broad money and maintain continuous surveillance on money level as it can signal future directions in inflation.

Financial access should also be a mainstay of financial development policies. Domestic credit to the private sector as a percentage of GDP was found to have a positive coefficient and correlation with economic growth. This indicates the application of credit may have been significantly productive in the sectors of Kenyan economy. In as much, responsible authorities should foster an environment that can assist financial intermediaries to be able to exercise its function on credit creation. The government should encourage lending to productive sectors of Kenya like its dynamic private sector.

Kenya's efficiency within the financial markets is still ambiguous. Interest rates spreads have averaged 7.6% and while having been controlled over the 30-year period, the interest rate spread can be reduced to encourage competition within the financial market. High interest rate spreads pose a constraint to the development of private sectors and economy thus consistent involvement of the Central Bank of Kenya in keeping the spread low is encouraged.

5.5 Limitations of the Study

The study had a limitation in the number of proxies used to analyze financial development in Kenya. Financial development is multi-dimensional and therefore has manycomponents that can be used to describe it. The World Bank developed a comprehensive framework for measuring development and in addition to the three variables (efficiency, access and depth) used in the study there is also stability of financial markets. Unfortunately, the study could not include stability in its analysis because of lack of such data in Kenya's financial market.

Another inadequacy of the study was it was difficult to make meaningful comparison between results of this study to other studies. Past research analyzed financial development using different proxies for instance some studies used stock market capitalization to GDP ratio, the ratio of currency to narrow definition of money, and the matrix of bank claims on the private sector to nominal GDP ratio for analysis. As such, while conclusions where the same it would be difficult for the study results to mirror other inferences made by other studies on the causation relationship between economic growth and financial development.

A regression analysis was employed to determine the relationship between financial market development and economic growth. It must be noted that there are some limitations of multiple regression that are difficult to account for. For instance, an implicit assumption of regression is that cause and effect relationship amongst variables remains unchanged. This postulation may not always hold true therefore evaluation of results made on the grounds of the regression model may lead to invalid and misleading generalizations.

5.6 Suggestions for Further Research

Financial market development is crucial to the growth of an economy; hence, further studies should be done to explain how financial markets could be exploited to benefit a nation. Such studies should include other variables which explain financial market development in Kenya, for instance stock market capitalization to GDP, price synchronicity, duration, ratio of new corporate bond issues to GDP, price impact to mention a few. Inclusion of such variables on future studies may yield better results on the analysis of the relationship between market development and the growth of Kenya's economy.

Future research can also investigate the influence of other factors other than financial variables. For instance in this study model, financial market variables where able to explain 70% of the systematic variations in economic growth. This ultimately meant that other determining factors of growth might explain variations in economic growth as measured by GDP per capita. Examples of such variables are those identified in models such as Solow model (1956) human capital, technology and natural resources that can be included in further research.

The study can also be refined by the inclusion of a bigger population than presented. Increasing the period under review is ideal as it limits the impact of outliers and extreme units/observations within the data elements. Another benefit accruing to the use of a larger population size is that analysis can be generalized with more confidence when interpreting the results. Therefore, further research can use a period longer than 40 years in its analysis.

REFERENCES

African Economic Outlook. (2015). Sustainable Cities and Structural Transformation. African Development Bank.

Allen, D. S. & Ndikumana, L. (1998). Financial Intermediation and Economic Growth in Southern Africa. *Journal of African Economies*, 9(2), 132-160.

Adhikari, N. (2011). A review on growth models. Central department of Economics.*Journal of Economic Issues*. 13(2), 21-34.

Aziakpono, M. J. (2004). Financial development and economic growth in Southern Africa. *Quarterly Journal of Economics*, 108. (33-49)

Bakang, M. L. (2015). Effects of financial deepening on economic growth in Kenya. *International Journal of Business and Commerce*, 4(7), 01-50.

Barbier, E. (2003). The role of natural resources in economic development. Blackwell Publishing Ltd.

Bloom, E, Canning, D. & Sevilla, J. (2003). The Demo: A New Perspective on the Economic Consequences of Population Change, Population Matters Monograph. *Journal of Business,* 1(1), 25-37.

Blume, E. & Thomas, J. (2014). Harrod 1939. Hoover Institution, Stanford, CA.

Brooks, C. (2008). Introductory Econometrics for Finance (2ND ed). Cambridge University Press, New York.

Buchichi, A. N. (2013). The impact of financial sector deepening on economic growth in Kenya. *International Journal of Social Sciences and Project Planning Mana*gement, 1 (1), 4164.

Central Bank of Kenya, Bank Supervision Annual Report 2015

Central Bank of Kenya, Bank Supervision Annual Report 2016

CFA Institute. (2016) CFA Level I Economics. CFA Institute, Volume 2. Vital Book file.

Chisimbili, R. H. (2015). Financial development and economic growth in Tanzania.*Journal of Economic Issues*. 17(6), 30-34.

Cihák M, Demirgüç-Kunt A, Feyen E & Levine R. (2013) Measuring financial development.*World Bank Economic Review*. 14(3), 597–605

Croitoru, A. (2012). Schumpeter, J.A., 1934 (2008),The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, translated from the German by Redvers Opie, New Brunswick (U.S.A) and London (U.K.): Transaction Publishers. *Journal of Comparative Research in Anthropology and Sociology*, 3, 137-150.

Domar, E. (1946). Capital Expansion, Rate of Growth, and Employment. *Econometrica*. 14 (2): 137–147.

European Investment Bank. (2013). Banking in sub-Saharan Africa, Challenges and Opportunities. Paper presented at the European Investment Bank Conference, Luxembourg.

FitzGerald, V. (2006). Financial development and economic growth: a critical view. Background paper for World Economic and Social Survey 2006, Oxford University. 1-33.

Frankel, J. (2000). Globalization of the Economy in J. Nye and J. Donahue (eds.), Governance in a Globalizing World, Brookings Institution Press.

Greiner, A. (2008). Models of Economic Growth. Bielefeld University, Germany

Gujarati, D. (2003). Basic Econometrics (4th ed.). New York: McGraw Hill.

Gundlach, E. (2005). Solow vs. Solow: Notes on Identification and Interpretation in the Empirics of Growth and Development. *Review of World Economics*. 141(3), 541–556

Harrod, R F. (1939). An Essay in Dynamic Theory. *The Economic Journal*. 49 (193), 14–33.

IFC Advisory Services. (2013). Access to Finance Sub-Saharan Africa report.

Johnston, M. (2013). Secondary Data Analysis: A Method of which the Time Has Come. School of Library and Information Studies, University of Alabama Press.

Kenya Economic Outlook (2015). African Development Bank

King, R. G.& Levine, R. (1993). Finance and Growth: Schumpeter Might be Right. *The Quarterly Journal of Economics*, 108 (3). 717-737.

Kothari, C.R. (2004). Research methodology: Methods and techniques (2nd ed.), New Delhi: New Age International.

Levine, R. & Zervos, S. (1998). Stock markets, banks and economic growth. *The American Economic Review*, 88(3), 537-558.

Levine, R. (1997). Financial Development and Economic Growth. *Journal of Economic Literature*. Vol. XXXV, 688–726.

Lucas, R. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics* 22, 3-42

Maina, T. M. (2013). The effect of capital market deepening on economic growth in Kenya. School of Business, University of Nairobi.

Manacorda, B. (2011). Economics of Labor. University of London International Programmes. Published by University of London 2002.

Marone, H. (2012). Measuring Economic Progress and Well-Being: How to move beyond GDP? Oxfam America Research Backgrounder series.

Making Finance Work 4 Africa (MFW4A). Kenya: Financial Sector Profile report.

Miles, R. (2005). Stock market liberalization, the cost of capital and investment; how significant is the effect in emerging markets. *Savings and Development Journal*.29(4), 349-362.

Montiel, P.J. (1995). Financial policies and economic growth: Theory, evidence, and country-specific experience from sub-Saharan Africa. AERC Special Paper.

Mwangi, J. M. (2016). Effect of Financial Structure on Financial Performance of Firms Listed at East Africa Securities Exchanges. *Quarterly Journal of Economics*, 128 (1). 17-37.

Ndalu, C. (2011). The relationship between economic growth and insurance penetration in Kenya. School of Business, University of Nairobi.

Nehru, V.& Dhareshwar, A. (1993). A New Database on Physical Capital Stock: Sources, Methodology and Results.*Revista de Analisis Economica*, 8(1), 37-59.

Ngechu, M. (2004). Understanding the research process and methods. An introduction to research methods. Acts Press, Nairobi.

Ngugi, R. Amanja, D. & Maana, I. (2008). Capital market, financial deepening and economic growth in Kenya. AERC Research Paper 155.

Nordhaus, R. William, D. & Tobin, J. (1973). Is Growth Obsolete? The Measurement of Economic and Social Performance, edited by Milton Moss, 38(1), 509-564.

Ndebbio, E. J. (2004). Financial deepening, economic growth and development: Evidence from selected sub-Saharan African countries. AERC Research Paper 142.

Odhiambo, N. (2008). Financial development in Kenya: A dynamic test for the finance led growth hypothesis. *Journal of Economic Issues*. 13(2), 21-34.

Office of Public Communications. (2008). Kenya Vision 2030 report.

Omondi, F. (2015). The effect of financial deepening on economic growth in Kenya. School of Business, University of Nairobi.

Pill, H. & Pradhan, M. (1995). Financial Indicators and Financial change in Africa and Asia. IMF Working paper 95/123

Toshiyuki, S. & Ting, Y. (2010). Challenges and developments in the financial systems of the Southeast Asia Economies. *OECD Journal: Financial Market Trends*, 2(1), 11-30.

Richard, A. (2003). Economic Growth, Inequality, and Poverty: Findings from a New Data Set. World Bank Policy Research Working Paper Series.

Rousseau, P. L. &Wachtel, P. (2008). What is happening to the impact of financial deepening on economic growth? Working paper for the UNU / WIDER conference on Financial Sector Development for Growth and Poverty Reduction.

Schumpeter, J.A. [1911] (2008). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, translated from the German by Redvers Opie, New Brunswick (U.S.A) and London (U.K.): Transaction Publishers.

Singh, A. (1993). The Stock Market and Economic Development: Should Developing Countries Encourage Stock Markets? *UNCTAD Review* No.4.

Singh, A. (1997). Financial Liberalization, Stock markets and Economic Development. *The Economic Journal*. 771-782.

Solow, R. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70(1), 65-94.

Valickova, P. Havranek, T.& Horvath, R. (2013). Financial Development and Economic Growth: A Meta-Analysis. William Davidson Institute Working Paper Number 1045.

Weber, K., Gerald F, D. & Lounsbury, M. (2013). Policy as Myth and Ceremony? The Global Spread of Stock Markets, 1980-2005. *Academy of Management Journal*. 52 (6),1319-1347.

Woodford, M. (2002). Financial Market Efficiency and the Effectiveness of Monetary Policy. Princeton University Press.

Wooldridge, J. M. (2002). Econometric Analysis of Cross Section and Panel Data. Cambridge, MA: MIT Press.

Zou, C. Ladrou, C. Guo, S. & Feng, J. (2010). Identifying interactions in the time and frequency domains in local and global networks – A Granger Causality Approach. BMC Bioinformatics. 11(33), 67-69.

APPENDICES

APPENDIX 1: Raw Data

Year	Domestic credit to private sector (% of GDP)	Broad money (% of GDP)	Interest rate spread (%)	GDP per capita (US$)
1971	17.43	29.67	5.50	152.55
1972	16.49	28.54	5.50	174.40
1973	17.89	30.49	5.50	199.69
1974	17.98	25.71	5.19	228.76
1975	17.33	27.39	4.87	241.67
1976	16.83	28.18	4.87	248.24
1977	17.51	32.80	4.87	309.35
1978	21.71	34.53	4.87	351.64
1979	20.97	34.35	4.87	398.04
1980	21.81	29.93	4.83	446.57
1981	21.00	29.47	3.57	405.55
1982	20.44	30.42	2.30	366.27
1983	19.32	28.18	2.56	327.82
1984	18.99	28.34	2.65	326.94
1985	19.33	26.68	2.75	312.20
1986	19.31	30.39	2.75	355.23
1987	18.42	30.24	3.69	377.42
1988	18.93	28.90	4.67	382.02
1989	19.22	28.40	5.25	365.97

1990	18.66	29.58	5.08	366.30
1991	19.96	30.98	6.78	337.12
1992	22.15	36.52	8.87	328.84
1993	18.50	37.07	12.34	223.33
1994	19.83	38.02	13.55	269.25
1995	25.81	42.23	15.20	330.80
1996	21.68	35.79	16.20	427.95
1997	24.36	38.42	13.52	452.98
1998	23.96	35.81	11.09	473.43
1999	26.57	35.77	12.83	421.43
2000	25.76	35.16	14.24	403.98
2001	25.22	35.24	13.03	401.78
2002	25.85	38.16	12.97	395.85
2003	25.16	39.02	12.44	436.69
2004	27.29	39.33	10.10	458.88
2005	26.28	38.91	7.80	519.80
2006	22.89	34.60	8.50	697.01
2007	23.04	36.06	8.18	839.11
2008	25.38	36.11	8.71	916.90
2009	25.02	36.46	8.84	920.08
2010	27.23	40.31	9.81	967.34
2011	30.57	40.85	9.42	987.45
2012	29.54	40.86	8.15	1155.02

2013	31.71	41.41	8.67	1229.11