RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT INDICATORS AND STOCK MARKET PERFORMANCE IN KENYA

By

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DECLARATION

I declare that this Dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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DEDICATION

This Thesis is dedicated to my grandparents; grandmother Elizabeth Chege and grandfather Peter Chege who for all intent and purpose wished I get the best in all facets of my life. Encouraged by your enduring devotion I will always do my best.

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LIST OF ACRYONMYS/ ABBREVIATIONS

ARDL	Autoregressive distributed lag
CBK	Central Bank of Kenya
ECM	Error-correction model
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
GDP	Gross Domestic Product
NBFIs	Non-bank financial institutions
Saccos	Savings and credit cooperative societies
VAR	Vector auto regression
VECM	Vector error correction mechanism
CMA	Capital Markets Authority
NSE	Nairobi Securities Exchange
KNBS	Kenya National Bureau of statistics

ABSTRACT

The study examined the relationship between financial development indicators and stock market performance in Kenya for the duration between 2004 and 2018. The purpose of the research was to determine whether there is a significant relationship between financial development indicators (depth, accessibility and openness) and stock market performance measured by market NSE 20 share index. Quarterly secondary data was used and sampled from the Central Bank of Kenya statistical reports and Kenya national bureau of statistics. Hypotheses were devised and examined using the Vector error correction mechanism modeling. The study concluded that financial development indicators have a significant impact on the stock market performance which is a key driver of economic growth in Kenya. Recommendations were made to promote and encourage stock market performance. The Central Bank of Kenya needs to adopt an expansionary monetary policy to increase money supply in the economy by reducing the level of real interest rates. There is need for the Capital Market Authority to encourage locals to venture in stock market. This can be done through educating investors and awareness campaigns. Local investors' participation will foster stock liquidity and increase confidence to the stock market.

Keywords: Stock Market Performance, Financial Development, Finance-led Growth Hypothesis, Financial Liberalization, Financial Repression, Base-broadening Hypothesis, Broad Money Supply, Credit to Private Sector, Foreign Direct Investment

DEFINITION OF TERMS

Capital market: Refers to the market for investors to trade debt and equity instruments.

Broad money supply: Encompasses coins, notes and short-term deposits available in the economy.

Financial development: advancement of the financial sector in terms of depth, accessibility, efficiency, openness and stability.

Foreign investments: Entails transfer of financial instruments such as bonds and stock across different countries with an aim making profits.

Private sector credit: These are loans administer by financial institutions to investors.

Stock Market performance: This is the performance of the Nairobi Securities Exchange.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Financial development and stock market performance in any given country has been a subject that has raised considerable debates over the recent past among development economists. Numerous scholars have done empirical studies on the relationship between financial development and stock market performance; both in the developed and the less developed states, the findings proving to be conflicting.

Investment capital is postulated by Demirgue and Levine (1996) as an ingredient for economic broadening. Stock market deals in price discovery, capital supply, decrease in transaction expenses through creation and channeling of information on institutions fostering efficient markets in which the firm value includes current information. Stock market is a core subset of a stable financial system which adds immensely to a country's economic development (Osamwonyi, 2005) .Stock market provides an avenue for the financing of long-run projects (Richard, 1996). According to Laeven,(2014) stock market aids the implementation of fiscal, monetary and exchange rate policy by the government. Stock market is monitored by the increase in listed companies and corporations and an increase in liquidity; this is magnitude of active trading (Applegarth,2004). In broader terms stock market can be viewed as a channel to mobilize savings for the numerous institutions; equities market, currency market and bonds and bills market to the investing public.

The highest GDP growth rate in Kenya recently was 7% in 2007, which later slumped to 1% in 2008 due to post election violence. 2013-2017 the GDP growth is averaged at 5% per annum. According to Central bank forecast in 2018 the countries' GDP is expected to rise above 6% given the tremendous expansion in finance sector, tourism, telecommunication, transport, construction and a recovery in agricultural sector. Stock market is becoming a significant player to investment in Kenya to achieve this desired growth

Developing countries have inadequate domestic investment funds hence financial openness is crucial to cater for the deficit and promote the desired economic development. World investment report 2018 pointed out Kenya's foreign investment grew by 1.706 billion USD in 2018 compared to a drop of 123.637 million in 2017.Interest rate capping was introduced in 2016 with the objective of increasing financial access to investors. Financial access as indicated by the credit to private sector per GDP recorded a 28 per cent growth according to the World Bank economic indicator collection for the year 2018. Financial depth is a measure of the amount of financial resources available in the economy to investors. Money supply as a proxy for financial depth has a positive correlation with stock prices. An increase in money supply makes funds accessible to invest in the stock market.

1.1.1 Financial development.

According to World Bank report (2012) financial development is defined as the advancement of the financial sector in terms of depth, accessibility, efficiency, openness and stability. Kenya's financial sector has been found to propel economic growth. Financial sector facilitates transfer of resources between economic agents. Among the pioneering studies on financial development is one carried out by Schumpeter (1911), his argument was that financial development lead to

economic growth. He stressed that entrepreneurship and financial institutions were essential and significant segments for promotion of economic growth. His conclusion highlights that economic growth and performance of the country relies on the expansion of the financial structure which also facilitates the allocation of funds to the best investors. Robinson (1952) disputed Schumpeter study; his research concluded economic growth led to the development of financial sector. King and Levine (1993) suggested that appropriate division of finances from financial institutions to investors and entrepreneurs would facilitate the minimization of cost of investments in productivity causing economic growth and acceleration.

A Financial system has three main subsets namely financial markets, financial intermediary and financial regulation. Financial markets channel funds to corporations and government for investment. This is through the trading of securities such as equities, bonds, currencies and derivatives. Financial institutions act as intermediaries between lenders and borrowers; they determine the flow of funds. Financial regulators on the other had ensure a provide environment for they involved parties adhere to the set rules and guidelines in the financial system, (Gorori,2014) .

Chinn and Ito (2002) argued that financial sectors with efficient legal and financial access benefit more from financial relief. According to Demetriades and Andrianova (2004) the soundness of financial institutions, such as financial regulation and the rule of law, may define the success or failure of financial reforms.

Huang and Temple (2005) argue that growth in stock market is followed by continuous rise in financial depth. Levine (2001) finds that entry of foreign banks in the economies of developing

countries promotes the efficiency of the domestics banking system, and financial openness tends to foster stock market liquidity.

Inadequate money supply, high inflation, Treasury bill rates are among the factors limiting stock market growth in Asian Markets (Aurangzeb, 2012). Similarly in Ghana policies limiting foreign investment and high taxes on investment income have proved to cause adverse effect on the country's stock market (Osei, 1998). Aduda, Masila and Osongo (2012) point out that the stock market is experiencing challenges due to the under development and unstructured financial sector. This has caused the economy to grow slow given that the stock market is not mobilizing the much need long term funds to investors.

Kenya's finance industry is segmented into two: the formal and informal sector. According to CBK et al.(2011) the formal sector comprise of banking, insurance, capital markets, pension funds, savings and credit cooperative societies (SACCOs) and development financial Institutions. Contrary the informal sector is one that unregulated yet offers financial services to the public. Some of the institutions in this category include Rotating savings and credit Associations, Accumulating Savings and Credit Associations (ASCAs) .(CBK et. al ,2011).

According to the Economic survey (2018), there was a decline in growth to 3.1 per cent in the financial and insurance sector over 2017. The decline is attributed to a significant constrained growth of financial activities. However the insurance sector performed better in 2018 unlike 2017. The performance of activities in the financial sub-sector declined significantly from 6.9 pct in 2016 to 2.6 pct growth in 2017.the gross effect of the decrease in financial activities was insulated by 6.5 per cent growth of the insurance sub-sector in 2017 which had increased from

5.2 per cent experienced in 2016. The admirable performance by the insurance sub-sectors was attributed to a substantial growth in gross premium income over the duration under review.

There was a decrease in credit to the private sector to 2.4 per cent from 4.1 per cent growth experienced in 2016. This drop is indicated on the sub-dual performance of the financial sub-sector in the economy. Nevertheless, total domestic credit increased by 7.9 pct compared to a growth of 6.4 pct in 2016. Mainly this increase was linked to a 12.1 per cent growth in credit to the National Government. Over the year, extended broad money supply (m3) rose by 8.9 per cent unlike a 3.6 per cent growth experienced in 2016.

1.1.2 Stock market in Kenya

Stock markets are a vital instrument in the economic growth of any country. Stock markets provide companies with a non-financial institution source of finance by the trading of equity to the public. According to the Kenya development plan launched in 2007 annual economic growth is forecasted to increase by ten percent for the next two decades. To achieve this desired growth the plan proposed that key instruments such as capital market to be used to marshal investment resources which are significant in implantation of vision 2030 economic blue print.

The stock market was introduced in Kenya in 1954, this was after the kickoff of the capital market authority. The CMA agency is mandated to regulate and foresee development of market operations. Ngugi, Amanja and Maana (2013) suggested minimal performance of the stock market is attributed to the CMA not delivering its services adequately. The sector has

experienced poor results from stock brokers' portraying that there is a weak surveillance and regulation.

The Kenyan bond segment has witnessed the trade of treasury bonds as well as the corporate bonds. The market has experienced some setbacks since its establishment. Treasury bonds were established in the 1980's while the initial non-government bond was floated by the East African Development Bank in 1996. The government issued treasury bills since then as a source of funds to supplement its deficit budget (Afande, 2015). It's only after a decade after when the first bond was issued that about ten corporate bonds were listed in the Kenyan market, (Ngugi, 2006).

Kenyan bond market turnover has been broader than that of equities since 2009, mainly as a result of government bonds. In 2016, the bond market turnover was Kshs 433 billion which was a raise from Kshs 305 billion experienced in 2015. The bond turnover dropped by 1.2 per cent in 2017 to Kshs 429.5 billion. Turnover has been 99 per cent linked to government treasury bonds (NSE, 2017), while corporate turnover is less than 1 per cent of bond turnover in a year in exception of 2010 and 2011 (Ngugi, Amanja and Maana 2013).

Recently Capital Markets Authority (CMA) reviewed the 75 per cent cap. The 75 per cent cap was put in place by the treasury to reserve a stake of listed firms for domestic investors as a way of encouraging Kenyans to trade in the stock market. Through review of the cap from 75 per cent up to 100 per cent ownership by foreigners, the government aims at promoting financial openness thus attracting more foreigners to trade in the stock market. According to CMA data some foreign investors have taken advantage of the cap review and increased their stake beyond the 75 per cent former ceiling. Stanbic Holdings, Scan group, Standard Chartered Bank among others saw a rise in stake held by foreigners beyond 75 per cent at some point since the cap was

reviewed in 2015. Despite the review foreign investments in Kenya have remained low. This has been pointed out by the poor financial performance of listed firms in the Nairobi Securities Exchange. In 2017 twelve firms out of the sixty four firms listed issued profit warnings to their shareholders and in 2018, six listed firms expected a decline in profits. The firms attributed the poor performance to the poor operating environment.

1.1.3 Nairobi Security Exchange (NSE)

Nairobi security Exchange (NSE) is among the top markets in Africa attracting diverse investors all over the world. NSE has grown immensely since 1994 when the NSE 20-index recorded a remarkable raise of five thousand and thirty points. During the year, NSE was recognized to be the best performing developing market in the world by the International Finance Corporation (IFC). NSE recorded a return of 179 percent in term of dollars. Similar results were duplicated in 2007 after six initial public offers (IPOs) and other offers were floated between 2006 and 2007.

The Kenyan government has been in the forefront to implement its policy of Kenyanisation formulated after independence, the government aims at promoting privatization of numerous state corporations and companies in which they can raise capital through IPOs listing at NSE. The first sale of a stock to the public to raise funds, distribute risks or acquire new investors who bring in new innovative ideals is defined as an IPO. The NSE has four main investment market sub sectors; Main Investment Market Segment (MIMS), Alternative Investment Market Segment (AIMS), Growth Enterprise Market Segment (GEMS) and finally the Fixed Income Securities Market Segment (FISMs) , each segment has its own eligibility criteria.

In 2006 Kenya Electricity Generating Company (Kengen) floated its IPOs, which was over subscription. This necessitated the NSE to mandate the Central Depository and Securities Corporation (CDSC) to provide central clearing, settlements and depository services for securities listed at Nairobi Securities Exchange. NSE has five main security market indices namely, the NSE 20 share index which is the oldest index, FTSE NSE Kenya 25 indices. In 2008 the NSE All share index (NASI) was developed. NASI is a measure of the market performance. It includes all the shares traded in a given day. In 2009 automatic trading of government bonds was introduced. This was a major implementation in promoting capital market. 2011 the Nairobi Stock Exchange Ltd was upgraded to Nairobi Securities Exchange Ltd. The name was transformed to reflect the mission and vision in trading of securities (NSE website ,2019).

1.2 Statement of the problem

The fundamental of the discussion is the challenge of whether there is a relationship between financial development indicators and stock market performance. Secondly find out whether strong stock market performance is supply led. The subject is crucial since resolution of the effect structure between financial development and stock market performance has significant inference to policy-makers' resolutions about the suitable growth and development policies to implement.

Ideally stock market performance reflects that of the economy. Kenya's stock market has experienced unsteady growth since the political crises in 2008. In the third quarter of 2018 share prices decreased due to exit of foreign investors. However local stock investments grew slowing down the share price erosion.

Deyshanppriya (2016) reveals that developing markets support the finance-led growth while the developed markets supported bi-directional causality on stock market development and economic growth. Ratanapakron and Sharma (2007) examined on the relationship between macro- economic variables and U.S stock price index. Among the independent variables was financial depth (money supply). The findings showed that money supply had a positive correlation with stock prices in the long run. On the Contrary Zhou, Zhao, Belinga and Gahe (2015) suggested that stock market liquidity, foreign investment affected stock market development positively. Financial depth and financial access had a negative effect on stock market development in Cameroon. Wongbangpo and Sharma (2002) found a long term there is a negative relationship between stock market performance and money supply in Indonesia and Philippines while a positive relationship between money supply and stock market in Malaysia, Singapore and Thailand. Chincharat et al (2007) observed that money supply was statistically insignificant to the growth of stock market.

Local studies have focused more on the effect of financial development on economic growth for instance Odhiambo (2008) examined the granger causality between financial development and economic growth in Kenya. The study employed time-series data for the period 1968-2002 with broad money supply (m2) currency ratio (cc/m1) and credit to private sector as measures for financial development and economic growth relay on the proxy used for financial development in Kenya and that the long-run economic growth did granger cause financial development . The paper supported that economic growth caused financial development. Similarly Onuonga (2014) found that financial development had a positive significant effect on economc growth in kenya. Others on the effect of stock market on economic growth in Kenya; Ngugi,Amanja and Maana,(2013) examined the relationship between financial deepening, capital market and

economic growth in Kenya. The study employed multiple regression and correlation method to identify the association between the variables. The study concluded there is a positive correlation among capital market deepening and economic growth. Owiti (2012) also support that there is a positive relationship between stock market and economic growth. Kimani and Olwenyi (2011) findings concluded that stock market performance granger caused economic growth. These studies prove that stock market is a significant player in the country's economic development agenda. Ngugi et al (2008) results indicated that stock market performance has a positive impact on the growth of the country's economic growth.

Kemboi and Tarus, (2012) did a study on the macro-economic determinants of stock market development in kenya. The results suggested that macro- economic factors; level of income, development of the banking institution and stock market liquidity are significant factors of stock market development in Kenya. However Munene (2017) examined the effect of financial deepening on capital market development in Kenya. The findings point out that financial access and openness have a negative significant effect on capital market development in Kenya.

As indicated by the studies cited above they focus on the effect of macro-economic factor on stock market performance, the impact of stock market on economic growth while others on the role of financial development in economic growth. The few available studies on the relationship between financial development indicators and stock market performance point out contriving results.

This study aims at addressing the existing resource gap on the relationship between financial development indicators and stock market performance. This research is significant since its findings will contribute to the increase of knowledge in the field of finance as well as provide

broad insight on the on-going debate concerning the type and direction both in the short-run and long-run between the factors in developing countries.

Furthermore this study does not limit itself to previous literatures or contributions but extends to application of more recent data and modern research methodology. Investigation of their causality is important to policy makers to make well informed decisions as it will propose the right policy vehicle to be implemented to propel the Kenyan economy and hasten growth as well as eradicate poverty.

1.3 Objectives

1.3.1 General objective

The general objective is to investigate the relationship between financial development indicators and stock market performance in Kenya.

1.3.2 Specific objectives

i. To determine the relationship between financial depth and stock market performance in Kenya.
ii. To find out the relationship between financial access and stock market performance in Kenya.
iii. To investigate the relationship between financial openness and stock market performance in Kenya.

1.4 Research Hypotheses

The following null hypotheses guided this research:

$H0_1$: Financial depth is statistically insignificant to stock market performance in Kenya.

$H0_2$: Financial access is statistically insignificant to stock market performance in Kenya.

$H0_3$: Financial openness is statistically insignificant to stock market performance in Kenya

1.5 Justification of the study.

Most studies have frequently focused on the nexus between financial development and economic growth; Agbetsiafa (2003), Odhiambo (2008), Akinlo, while others on the performance of individual company stock prices, Mbugua,(2007);Nangayaj,(2003). This study aims at devoting much emphasis on the role of financial development indicators on stock market performance in Kenya.

The various studies reviewed in chapter two show contrasting results. The studies show negative relationship between the financial development variables and the stock market performance while others support a positive relationship. This shows there is a need for more studies to be carried out on the impact of financial development to address inconclusiveness in the subject.

In addition it is noted that numerous studies focused on analyzing various individual macro-economic variables and their relationship with stock market performance. However there are few current studies that specifically research on several financial development variables and their impact on the stock market performance in Kenya. This research aims at providing more comprehensive study.

1.6 Scope of the study

The study was conducted only for Kenya, but is predictive and hence its findings can be inferred by other countries. The study sampled fifteen years quarterly data from 2004 to 2018. The study investigated on the relationship between financial development indicators and stock market performance.

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1.7 Chapter Summary

Chapter one has detailed explanation on the purpose of this research which aimed to determine the relationship between financial development indicators and stock market performance in Kenya. The chapter presented a background of the research, its significance and scope of the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an insight into significant theories supporting this study. It also presents a critical review of empirical literature on financial development and stock market performance in Kenya. The conceptual framework shows a link between financial development variables and stock markets performance. Stock market performance being a compound issue is affected by numerous factors such as financial, political, social and cultural factors. Intrinsically economic analysis can only account for a partial justification of their process.

2.2 Theoretical Review

The theoretical section in this chapter aims at providing in depth discussions on whether or not existing theories suggest there is a relationship between financial development indicators and stock market performance. The study focuses on four theories; financial repression theory, financial liberalization, finance led theory and base-broadening hypothesis.

2.2.1 Financial Repression Theory.

Financial repression refers to the idea that a set of government laws and regulations and other non-market restrictions hinder free functioning of financial intermediaries in the economy. Financial repression policies that limit the capacity of financial institution include interest rate, ceiling, liquidity ratio requirements, high bank reserve requirements, capital quotas, barriers on

market entry into the financial industry and credit ceilings. Financial repression in viewed by economists as a hindrance to efficient allocation of capital and hence impairing the stock market development.

Mckinnon and Shaw (1973) being the pioneer of the financial repression school of thought explained that an economy will only grow and develop if it has a sound and efficient financial system which will drive efficient capital allocation. They acknowledged that many countries; developed and developing ones, run a competition restricted financial sector. This is through government interventions and numerous laws regulating the sector. According to Shaw and Mckinnon (1973) findings financial repression discourages savings hence less funds are available for investors to borrow since the interest rates of return are lower than what is expected in a competitive market.

Mckimon and Shaw (1973) expressed that misguided government intervention through fiscal and monetary policies such as interest rates ceilings, high reserve requirements and direct credit programs acted as limiting factors to source of financial development. Mckinnon and Shaw viewed that ceiling on interest rates, because of high inflation rates, frequently led to adverse real interest rates. This discouraged household saving and created an increased demand for investable funds. The magnitude of investment decreased when real interest rates are too low, and so did the productiveness of invested capital given that when real interest rates decline too low productivity investment ventures may become profitable. Furthermore states imposed exorbitant high reserve thresholds on , banks, usually at low interest rates , in order to fund their own deficits easily. Nevertheless the reserve requirements served as a tax on the banking sector, resulting in advancement of interest rates depression hence developing greater disincentives for financial savings

Due to the barriers on financial activities by institutions they are unable to function efficiently and hence fail to channel funds into the appropriate investments thereby impairing the development of the entire economic structure.

Roubini and Sala-i-Martini (1992) examined on the effect of financial repression and concluded that financial repression inhibits economic growth; this is so since financial repression causes inefficient allocation of resources, increased cost of financial intermediation and decreased rates of returns to savers.

Financial repression limits capital mobility which is essential to link funds to the most efficient investment both internationally and locally. In a study by Capie and Wood (2002) on effects of British capital control, found out that there was an increase in prices, decrease in production and increased administration costs in the economy.

Eliminating capital control policies is a difficult process when they are put in place thus discouraging foreign direct investment inflow by decreasing 'free market' credibility of the economies. Exchange rate controls discourage imports through creation of quotas, this leading to an increase in prices for local goods. Foreign exchange has also been proven to negatively affect output and employment as well.

Guariglia and Poncet (2008) examined on the implications of financial repression on economic growth in China. The study used credit to private sector as a proxy for financial deepening. The study concluded that financial repression had a negative effect on the economic growth. Xu and Gui (2014) suggested that financial repression is a two sided coin; credit misallocation and government participation in banking sector hinder economic growth while on the other hand

interest control promotes economic growth through increasing financial credit discrimination may compel local corporate firms to seek foreign investment.

In 2016 the interest capping law came into effect. This directive was a measure by the central bank to increase access to credit by investors. However this regulation has been viewed by economists to have adverse effect to the economic development. Ng'ang'a and Wanyoike (2017) in a study on effect of interest rate capping on the stock market performance found out that interest rate control had a negative impact on the stock market development. The study states that the poor performance was linked to the decreased access to credit by the private sector since commercial banks limited loans due to the expected credit risks.

2.2.2 Financial Liberalization Theory

According to Auerbach and Siddiki (2004) financial liberalization is the elimination of barriers in financial sector to foster the development of economies. Typically there are three forms of financial liberalization. Domestic financial sector reform involves privatization and increase in credit extension to the private sector. Gelos and Werner (2002) employ domestic financial sector reform in a study on domestic manufacturing in Mexico.

Secondly financial liberalization can be described in form of stock market liberalization. Stock market liberalization is confound from a country opening up its stock market to foreign investors and simultaneously facilitating local firms to invest in international financial markets, Bekaert and Harvey(2003).

Financial liberalization may be viewed in the form of capital liberalization. This is a state where by special exchange rates for capital account transactions are moderated, Loots (2003), hence

local firms' access loan funds from abroad, Schmukler and Vesperoni (2006). The reserve requirements for institutions are moderated as well..

The concept of financial liberalization was initially developed by Mckinnon (1973) and Shaw (1973). The theory argued that elimination of barriers on interest rates as a result of financial liberalization would promote the savings level and in line increasing the capital accumulation and economic growth through the correct rate of return. They made the assumption that savings would be reflected by interest rates and there existed homogenous households who has free access to capital markets. Shaw (1973) adds on the argument that resultant real growth in the financial intermediaries gives local shareholders the incentive to borrow and save thus enabling them to grow more asset stake hence decreasing the cost of loans. The idea is also proposed by a research done by Gibson and Tsakalos (1994) who view that financial liberalization is a essential ingredient for financial markets to operate effectively and to provide new chances for financing in the current economy. The Rehman and Gill (2013) , promoted Mckinnon's hypothesis that an increase in the proportionate rate of private savings would lead to a raise in the average ratio of M/P to income concluding that increase in return on capital causes an increase in the need of real cash balancing holding for accumulation purpose. Hence money is only a catalyst through which growth takes place in developing countries and not a competing asset. Thus concluding that a raise in real return on money can rapidly foster investment savings propensities in developing countries Shaw (1973), developed the 'debt-intermediation hypothesis' in which there is an increase in incentives to save and invest through financial development. Shaw views investments as a declining function of real interest rate (r) and savings as an increasing function of economic growth rate (g) and real interest rate

Criticism on financial liberalization

Wijnbergen (1996) based his critic on the informal financial market. He argued that the limitations of financial liberalization as a result of increase in interest rate in the official market would lead to decrease in availability of investment funds for firms since it would draw resources out of the informal market. The beneficially of these funds is the formal market which is less efficient compared to the formal market in intermediation due to the prevailing high reserve requirements.

Taylor (1983) and Wijnbergen (1983) supported the structuralism theory which proposed that to financial liberalization might stagnate or decrease total supply of productive investment funds.

Caprio et al. (2001) points out that the world wide wave of financial crises has raised a flag for scrutiny of financial policies under liberalization. Thus giving financial institutions more freedom of action can increase susceptibility to risks, thereby increasing financial fragility. However the risks may not always impact negatively to the economy since high risks are also associated with high returns.

Moreover the liberalization theory relies on the unrealistic assumptions that the financial market is perfect. The banking sector deviates from the assumption in that it is an oligopolistic competition and the influence of financial liberalization could be decreased in loans and as well increased in the real interest with high magnitudes compared to those of perfect competition.

In an effort to determine the impact of financial liberation on economic growth in Pakistan, Hye and Wizarat (2013) found that there is a positive interaction between financial liberalization and economic development in the short term. However financial liberalization did not affect

economic development in the long term. The study used Auto- regressive Distributed Lag test for to analyze data for the period between 1971 and 2007.

Marc SC (2018) did a study on impact of financial liberalization on the financial development of eight counties. Data for the period between 1980 and 2012 was used and data analyzed through panel regression analysis. The researcher found that inflation had a negative effect on credit to private sector while foreign investment had a positive effect on stock market development. The study suggested that liberalization is important for stock market to grow. Financial openness would be important to stock market performance since cash inflows would be directed to investors in the stock market rather than being deposited in banking institutions

2.2.3 Supply-led Growth Theory

This school of thought; 'supply-leading hypothesis' also popularly known as the 'finance-led growth hypothesis' asserts that bank-based financial development is a major driver of stock market growth. This theory was introduced by Schumpter (1911).The school of thought is supported extensively by several studies (Beck and Levine,2002;Christopoulos and Tsionas,2004;Odhiambo,2009c; Akinko and Egbetunde 2010).Finance-led growth hypothesis attributes greater importance to the function played by the banking sector development in the stock market growth process.

Jung (1986) examined the finance led growth through employing cross-section data for 56 countries, for the period between 1950 and 1981. The financial development proxies used being ratio of currency to M1 and the ratio of M2 to nominal Gross National Product. Jung concluded that for the developing countries financial development led to economic growth. Furthermore Mohd (2012) made new insight by investigating the causal relationship by focusing on the non-

bank financial institutions (NBFIs) in Malaysia. Mohd used data for the period between 1974 and 2004 where ARDL bounds tests was used to test for co-integration. The study found that development of non-bank financial intermediaries' granger causes economic growth. The study concluded that there is a long-run relationship between NBFIs and economic growth.

Akinboade (2000) examined the granger causality between financial development and economic growth in Tanzania. The findings indicated that there existed a unidirectional relationship between financial deepening and economic growth. Financial development did granger cause economic growth for the period 1980-2010. The study used the ratio of bank deposit liability to nominal growth national product as a proxy for financial deepening. Ogola D.O (2016), his study investigated the effect of financial development indicators on economic growth measured by gross domestic product in Kenya. His paper also purposed to find out the direction of causality between financial development and economic growth in Kenya. In order to perform the objectives of the research Granger causality test was used to identify the direction of causality between the variables while pooled ordinary least squares was used to find out the effect of financial development on economic growth . Panel data for the duration between 2007 and 2015 was used. The results indicated that there existed a unidirectional relationship running from financial development to economic growth.

Bodie et al (2008) observed that the critical functions of financial development in promoting growth in a country are: facilitation of efficient trade on goods and services, favorable laws and regulations, policing and ensuring corporate governance, mobilizing household to save and risk management, access to cheaper and current information about potential investments and allocating capital. These factors were found to be affecting positively to economic growth. Odhiambo (2008) analyzed the nexus between financial development and

economic growth in Kenya. The study employed ratio of M2 to GDP, the currency ratio and domestic credit as the indicators for financial development through application of the dynamic granger-causality model. The results of the study proved that economic growth led to financial deepening

Akinlo and Egbetunde (2010) investigated the granger causality relationship between financial development and economic growth for several sub-Saharan countries. Using the vector error correction model for analysis, they found out that financial development did co-integrate with economic growth for; Central African Republic, Gabon, Nigeria and Congo, while there was a bi-directional granger causality relationship between financial development and economic growth in: Chad, Kenya, South Africa, Sierra Leone and Swaziland. However results for Zambia showed that economic growth did granger cause financial development.

Onwumere et al (2012) did a study on the effect of financial deepening on economic growth in Nigeria. The study employed broad money velocity, money stock diversification, economic volatility, market capitalization and market liquidity as the proxies for financial deepening. The study concluded that broad money velocity and market liquidity did granger cause the gross domestic product which acted as a proxy for economic growth. Money stock diversification, economic volatility and market capitalization did not affect the GDP

The theory acknowledges that a stable financial sector offers essential services to entrepreneurs and households with the effort to reduce transaction, information and effective intermediation. Financial sector mobilizes savings and channel them to viable investment projects and facilitate trading of securities. This theory is related to this research by providing crucial explanation of the role played by the financial sector in promoting stock market in the country.

2.2.4 Base Broadening Theory

The base broadening theory support that involvement of foreigners in investing in the local stock market leads to broadening of the financial markets in the country and the economic growth shifts from being influenced only by national economic factors but as well as foreign market activities. Due to the influence of foreign investments in the stock market is less affected by the domestic shocks (innovations). Merton (1987) assumed that free flow of information across international boundaries hinder foreign investors from fully diversifying their portfolios. Merton argued that investors are rational hence invest on stock that they possess efficient information. Base-broadening hypothesis supports that if both local and foreign investors accessed the same information on stock they will distribute diversify their portfolios equivalently.

Unlike other equity theories, base-broadening theory is structured to focus on the role of foreign investments in the growth in value of equity transactions in the stock market. The hypothesis has two main factors which interpret performance of equity and thus the stock market performance. Through financial openness investor base will increase as well as level of diversification and risk transfer. Further the theory points out that liquidity risk decrease with increase in flow of foreign investors in the domestic stock market Merton (1987). According to Gathenya (2015) due to reduced domestic innovations (shocks), risks associated with financial markets, decrease in cost of capital decrease and stock prices increase as investors demand less risk premiums to purchase stocks in the market.

Okuyan and Erbaykal (2011) did a study on impact of foreign transactions on the stock market returns in Instabul Stock Exchange. The study used autoregressive distributive lag models for analysis on data for the period between 1997 and 2009. The findings showed that there was a

positive significant relationship between foreign transactions and stock returns in the long term. The findings supported the base-broadening hypothesis in the long term. The finds implied that Istabul Securities Exchange activities be explained by broadening hypothesis.

Owen (2013) carried out a study on the effect of foreign investment inflows on the stock market performance. The study supported the base-broadening hypothesis. The finding indicated positive coefficients on expected inflows. The results implied that foreign portfolio investments in the local market boost stock prices. The rise in stock prices may be attributed to increase in stock demand. The stock prices were also viewed to be affected by previous periods expected portfolio inflows. Similarly Omoruyi and Osariemen (2015) assessed the impact of foreign inflows and stock market performance in Nigeria. In this study used data for the period between 1986 and 2013. The findings of the study concluded a strong positive correlation between foreign investments and stock market performance. The study being grounded on the base broadening theory recommended that reforms and policy implementations should be emphasized especially on promoting internationalization and linearization of stock market.

2.3 Empirical Review

Over the years numerous empirical studies have been carried out to investigate the relationship between financial development and growth in capital market. This researches range from cross country to a single country. The studies employ different analysis methodological techniques; cross-section data, time-series data and applying various proxies for financial development. To this point the results are not conclusive. In each economy there exists a financial system mandated to organize debt settlements, marshal the available financial aid from the excess supply

units of the economies' households and to share them wisely to the less self-sustained productive investments that need monetary support as well as aggregate and manage the financial risks. In addition financial structures play an important role in organizing the market, regulating the financing process as well as providing the investors with a set of instruments and means of management of investments. In light of these context and advancements, there is noticeable relationship between financial development and stock market performance. However we cannot infer the causal relationship between financial development variables in Kenya.

2.3.1 Stock market performance.

Stock market performance is characterized as the magnitude of the stock market liquidity, volatility; level of market fluctuation, concentration and the level of market integration in the global stock or capital market,(Kwaku, Acheampong & Wiafe, emmanuel Agyapong, 2013).

Law and Habibullah (2009) investigated the impact of both institutional and macroeconomic factors influenced stock market performance in twenty seven economies. The countries were sampled from Europe, East Asia and Latin America. Data for period between 1980 and 2001 was used and analysed using dynamic panel regression model. The study found that financial openness and institutional effectiveness had a significant positive impact on stock market development. Adam and Tweneboah (2009) focused on the relationship between financial openness and stock market development in Ghana. Monthly data for the duration between January 1991 and April 2006 .the study observed that foreign direct investment a proxy for financial openness affected stock market development. Johansen co-integration test was used for analysis.

Athapattu and Jayasinghe (2010) in there study examine the link between stock market and economic growth for Sri Lanka for the duration 1997-2008 observed a long-run relationship between the development of the stock market and economic growth, further confirmed the finance-led growth theory. The study applied Johansen- co-integration test and then the granger causality test. In 2010 Nnena did a study on impact of financial deepening and stock market development in Nigeria. The study used GARCH model and data for the period between 1980 and 2010. The research found a positive relationship between the variables. This study used data from Kenyan economy for the period between 2004 and 2018

Deyshanppriya (2016) in his study examined the causality direction of the stock market-growth nexus; using dynamic panel data analysis based on the panel granger non-causality test. The study uses data for twenty countries from developed and emerging markets. The study found out that there is statistically significant relationship between stock markets and economic growth in both markets. The study also reveals that developing markets support the finance-led growth while the developed markets supported bi-directional causality on stock market development and economic growth. This study will use stock market performance as the dependent variable.

Yartel and Adjasi (2007) in their study view that the development of stock market is a crucial ingredient in the growth of the financial sector of any country in that if substituted the functions of financial institutions such as banks in economic growth. This is so since they assist in price location, supply of liquidity and transfer of risks. This study used financial development as the independent variable

Naceur et al (2007) examined the determinants of stock market development in the middle-Eastern and North Africa region concluded that savings rate, financial intermediary, stock market

liquidity and the stabilization variable are significant determinants of stock market development. The study employed panel data analysis where data was obtained from 12 countries within the MENA region. . This study used data from Kenyan economy for the period between 2004 and 2018

Kemboi and Tarus, (2012) did a study on the macro-economic determinants of stock market development in kenya. The study used quarterly time-series data for the period 2000 to 2009. The data was analysed using Johansen-Julius co-integration technique and the error correction model. The results suggested that macro- economic factors; level of income, development of the banking institution and stock market liquidity are significant factors of stock market development in Kenya. Unlike this study which used macro-economic variables as the independent variables, this study employed financial development.

Okwo et al. (2012) using money supply and credit to private sector as measures of financial development and gross domestic product for economic growth found that financial development had no effect on Nigeria's economic growth. The study used ordinary least square regression analysis on data for the duration between 1986 and 2010. Malki and Assaf (2014) in a similar study concluded that financial access and financial depth measured by credit to private sector and money supply respectively had a positive impact on economic growth of Saudi Arabia. The study employed autoregressive distributed lag method for analysis and sampled data for the period between 1970 and 2008. The study concluded that financial access did granger cause economic development. Khadraoui and Smida (2012) in an attempt to explain determinants of economic growth in both developed and developing states supported the finance led growth theory. The study used Credit to private sector, money supply (m3) as measures of financial development and gross domestic product for economic growth. For analysis generalized method

of moments was employed, where sampled data for 70 countries for the period between 1970 and 2009 was used. The study concluded that money supply and credit to private sector had a positive relationship with economic growth. These studies used economic growth as the dependent variables while this research used stock market performance.

Further Idowu and Babatunde (2012) did a study to determine the effect of financial reforms on capital market development. The study employed data for the period between 1986 and 2010, where ordinary least squares method was used in analysis. The study found that the financial development indicators had a negative impact on capital market development. . This study used data from Kenyan economy for the period between 2004 and 2018 and NSE 20 share index is used as a proxy for stock market performance.

2.3.2 Financial depth and stock market performance

The ratio of broad money stock (M2) has been also adopted in this study as a proxy for the level of financial deepening. M2 has been broadly used in ancient literature by both Mckinnon (1973) and Shaw (1973). In the recent past scholars such as King and Levine (1993) have also employed M2 in their research where they refer M2 as the monetization variable (z). Monetization variable (z) is used to measure the size of the financial market as well as the financial depth in an economy. An increase in M2 is associated with expansion in the financial intermediary sector compared to the rest of the economy in that it reflects an accelerated increment in a variety of financial assets.

Ratanapakron and Sharma (2007) examined on the relationship between macro- economic variables and U.S stock price index. Among the independent variables was financial depth (money supply). The findings showed that money supply had a positive correlation with stock

prices in the long run. The study used time series for the period between 1975 and 1999. Similarly Caglic, Halac and Taskin (2010) examined interaction between money supply and stock returns on the Turkish stock market. The study used monthly data for the duration between 1992 and 2003. The study finding showed that the Istanbul stock Exchange National-100 (ISE-100) had a positive relationship with financial depth.

Sangmi and Hassan (2013) examined impact of macro-economic variables on stock market returns in India. Inflation, exchange rate, money supply and interest rate were regressed against BSE-100 index which was a measure for stock market returns. The study used monthly data for the duration between 2008 and 2012. The results concluded on the factors having an impact on India's stock market returns. Ting et al (2012) observed a positive relationship between interest rate, money supply and stock market returns in Malaysia. They used monthly data for the period between 1992 and 2011, ordinary least squares was used for analysis.

Ahmed (2011) recognized that money supply as a key factor in the growth of any stock market. His study examined the long term interaction of money supply, real gross domestic product, stock prices and stock market returns in Sudan. The study used co-integration test to monitor long term interaction while short term interaction and direction was determined using granger causality. Annual data for the period between 1960 and 2005 was used. The findings supported that money supply has an impact on stock market return in the long term.

Odhiambo (2008) examined the granger causality between financial deepening and economic growth in Kenya. The study employed time-series data for the period 1968-2002 with broad money supply (m2) currency ratio (cc/m1) and credit to private sector as measures for financial deepening and economic growth relay on the proxy used for financial deepening in Kenya and

that the long-run economic growth did granger cause financial deepening . However the study did not include stock market development. Aljarrah et al.(2012) observed that financial development measured by money supply and credit to the private sector are significant financial indicators that influenced economic growth in Jordan. The study used a time series data set for the period between 1992 and 2011 where co-integration and granger causality analysis were carried out.

Ita and Duke (2013) supports that stock markets boost economic growth. Stock market performance is dependent on; stock market liquidity, foreign investment, financial access and financial depth. Co-integration test and error correction models were used to analyze the level of association between the variables. Money supply (m2), market liquidity, inflation rate and gross fixed capital formation acted as proxies for financial deepening

Maysami and Koh (2000) observed a correlation between stock returns and money supply. The study investigated the relationship between macro- economic variables and stock market performance in Singapore. Wongbangpo and Sharma (2002) using data from 5 Asian countries, examined the impact of economic factors on stock market return. Among the independent variables was money supply. Stock prices acted as a proxy for stock market performance. They found a in long term there is a negative relationship between stock market performance and money supply in Indonesia and Philippines while a positive relationship between money supply and stock market in Malaysia, Singapore and Thailand. Chincharat et al (2007) observed that money supply was statistically insignificant to the growth of stock market.

Maku and Atanda (2010) observed that stock market performance in Nigeria was dependent on exchange rate, inflation rate and money supply. They used co-integration test and granger

causality for analysis for data between 1984 and 2007. Eita (2011) in a study on macro-economic determinants of stock market prices in Namibia found a positive relationship between stock market returns and money supply. The study used data for the period between 1998 and 2009 where an estimation equation was used for analysis.

Laichena and Obwogi (2015) viewed that gross domestic product, interest rates, money supply and foreign investment are important factors of stock market development. Mohammed, Sonia and Tayyaba (2017) did a study in Pakistan which pointed out money supply, oil prices , foreign investment had a positive relationship with stock market development. The study advocates that policy makers should promote financial sector to promote stock market development. However, contrary to the findings of Laichena and Obwogi (2015) a study done by Nalin (2014) concluded that money supply and inflation rate had a negative effect on stock market development.

Zhou, Zhao, Belinga and Gahe (2015) suggested that stock market liquidity, foreign investment affected stock market development positively. Financial depth and financial access had a negative effect on stock market development in Cameroon. Asongu (2010) point out the policy maker should focus on specific financial deepening factors since not all promote stock market development. The study used panel data analysis and annual data from 8 developing countries between 1989 and 2008.

2.3.3 Financial access and stock market performance.

In this study share of financial access is among the proxies for financial development. Financial access is measured using the credit by banks to private sector. This measure is applied extensively in similar studies; Kjosevski (2014), Chuan and Thai (2004).

Quartely and Gaddah (2007) did a study on the determinants of stock market development in Ghana. The study supported that credit to private sector has a positive effect on the stock market performance. Ayunku and Etale (2014) in a study aimed at investigating the determinants of stock market development found that credit to private sector and exchange rate are crucial factors that affect stock market development. Data for the duration between 1977 and 2010 was used, co-integration and error correction model the for data analysis. The study recommended that the policy maker should focus on policies that promote financial access to foster stock market growth in Nigeria.

Abu-Mhareb and Al-Fyoumi (2011) researched on causality between stock market, bank and economic growth. Their study accessed if financial development in Jordan was supply-led or followed demand. The employed a time series data set for the period. Granger causality analysis showed a unidirectional causality running from economic growth measured by gross domestic product to financial access measured by bank credit to the private sector.

Matadeen (2017) examined the macro-economic determinants of stock development a case study of Africa. The study used dynamic panel Vector Error Correction Model. Annual time-series data for the period 1989-2016 for 14 sub-Saharan countries (Kenya inclusive) was used. The results supported that economic growth, financial access, stock market liquidity, investment and macro-economic stability were important factors of stock market development in the region.

Ngugi,Amanja and Maana,(2013) examined the relationship between financial deepening, capital market and economic growth in Kenya. The study employed multiple regression and correlation method to identify the association between the variables. The data was analyzed using the

ordinary least square method. The study concluded there is a positive correlation among capital market deepening with financial broadening and financial accessibility.

Munene (2017) examined the effect of financial deepening on capital market development in Kenya. The study uses data for the period 1990-2015. Data is analyzed through ARDL-ECM model. The findings point out that financial depth and market liquidity have a positive significant effect on capital market development. However financial access and openness have a negative significant effect on capital market development in Kenya. The researcher concluded there is a positive significant interaction between financial deepening and capital market development in Kenya. On the contrary Kagoch (2013) in a paper investigating the effect of development of financial market on economic growth concluded that development of the banking sector in terms of size, promoted economic growth in Kenya. The study used time series data for the duration between 1970 and 2008 which was analyzed using an expanded neoclassical growth model. However other financial deepening indicators including domestic credit to private sector did not have a significant effect on economic growth.

Su, Bui and Nguyen (2016) in a study to examine the impact of macro-economic factors on stock market development. The study concluded that gross domestic product, credit to private sector and stock market liquidity had a positive relationship with stock market development. Sampled data from 36 developing countries for the period between 2003 and 2014 was used. Data was analyzed using General methods of moments technique.

El-Nader and Al-Raimony (2013) researched on macro-economic determinants affecting stock market development in Jordan supported that money supply, stock liquidity and credit to private sector had an influence on the stock market development. The study used Vector error correction

mechanism model for data analysis. Bayar (2016) concluded that financial investment, economic growth. Inflation, stock market liquidity, financial depth and financial access have an impact on stock market development.

2.3.4 Financial Openness and stock market performance.

Among the many challenges developing countries experience is limited domestic investment to propel the much desired economic advancement. The imbalance in local investment is caused by increased demand for capital and inadequate savings in less developed nations. To address the savings inadequacy, the country often resorts to international borrowing or attract foreign investors into the economy. Foreigners invest in developing economies with a motive to diversify their portfolio and maximize returns. Developing markets are characterized to be affected by high risks hence investors demand high returns (Tokat, 2004). Foreign investors measure their returns as a difference between stock prices at the beginning and the end of the investment period hence returns are a sum of returns from the security valued in local currency and returns valued in foreign currency (Sharpe et al, 2003). Foreign investment can be classified into two forms direct investment and portfolio investment.

Gab-Je (2002) did a study in Korea to examine the contribution of foreign investments to stock price volatility on the local market. The study's supported that whenever foreign investors are more informed than native investors, foreign investors may be buying under-valued stocks and disposing over-valued stocks hence facilitating in the stabilization of the stock market.

Kim and Young (2009) focused on the role played by portfolio investment on the capital market in Korea. The study used vector auto regression model and data for the period between 1994 and

2007. The findings showed that foreign portfolio flows affected the demand for stocks directly. This was through influencing the stock market liquidity consequently promoting rise in stock prices. Similarly Haithaipat and Chaiyuth (2013) concluded that foreign investors attributed to information asymmetry in the market in the market. The study suggested that foreign investors as a block acquire decisive information about the firm through meeting with senior management; hence they are more advantaged compared to native investors. Foreign investors are able to take earlier actions that contribute to stabilization of stock prices.

Aduda Jo (2012) in his study, 'The determinants of stock market development in Kenya' regressed macro-economic factors against stock market development. Among the macro-economic variables were stock market liquidity, foreign direct investment and domestic savings. The study used secondary data for the period 2005-2009. The regression analysis concluded that stock market liquidity and domestic savings were significant determinants on stock market development. However foreign direct investment measured by private capital inflows did not have any significant relationship with stock market development. This study will include data for the period up to 2018 and also employ VECM model for analysis.

Kwaku, Acheampong and Wiafe, Agyapong,(2013) conducted a study on the impact of foreign direct investment (FDI) on stock market development; a case study of Ghana economy. The employed ARDL model for the analysis of which time-series data for the period 1990-2010 was used .the findings supported that FDI had a positive significant effect on stock market development hence supporting the complementary hypothesis in the short run.in addition the researcher found there is bi-granger causality between FDI and stock market development. This research is different since it aims at including recent time-series data and particularly a case study of Kenya's economy. Bekaert and Harvey (2000) supported that foreign portfolio

investments minimize cost of capital in the developing economies. Decreased cost of capital promotes efficiency hence making the domestic market lucrative for more investors, increasing share price and the market capitalization as a whole. The study used ordinary least square method for analysis. This study will also employ the vector Error Correction model (VECM) and data for the period up to 2018.

Onyeisi, Odo and Anoke (2016) did a study on the role of foreign portfolio investment inflows on stock market deepening in Nigeria. The study used data for the years between 1986 and 2014. Data was analyzed using co-integration test and vector error correction mechanism. The findings showed long-run relationship between foreign portfolio investments has a positive relation to stock market advancement in Nigeria. Further a unidirectional causality link was detected running from stock market advancement to foreign portfolio investment Ozurumba (2012) observed a unidirectional causality running from stock market returns to foreign portfolio investment in Nigeria. The study employed granger causality to monitor the direction of causality between the variables and ordinary least squares to analyse the effect of financial openness on securities exchange.

In Brazil Luciana, Meurer and Silva (2010) study the impact of foreign investment and stock market returns using data for the period between 1995 and 2005. The findings supported that foreign investment boosted the Brazilian economy. There was a positive correlation between foreign portfolio investment and stock market returns. A unidirectional interaction was observed where stock returns granger caused foreign investments. Franxen el at (2009) researched on the impact of foreign investments on capital market in Brazil. The study employed vector auto-regression model for analysis. Time series data set for the period between 1995 and 2005 was used. The study concluded foreign portfolio investment has impacted positively on the stock

market returns. They argued that high stock returns drew foreign investors; this boosted the rise in value of stock market returns.

Eniekezimene (2013) found out that foreign investments led to the growth of stock market in Nigeria. Chukwuemeka et al (2012) using data for the duration between 1981 and 2010 examined the determinants of stock market development. The study used finite distributed lag model and observed that foreign direct investment has a long term interaction with stock market performance for the Nigerian Market. Ezeola et al. (2009) in a study on the relationship between stock market development and both foreign and local investment in the Nigerian stock market found that foreign investments had a negative effect on the stock market while local investments had a positive effect on the stock market

Sin-Yu Ho, Bernard Njindan Lyke,(2017) study on the 'Determinants of stock market development concluded that macro-economic factors; real income level, level of saving , gross domestic investment, private capital flows, financial institution growth and foreign portfolio investment are significant determinants of stock market development. Haider et al (2017) found a strong a correlation between stock market performance and foreign portfolio investment. The study used quarterly data for the period between 2007 and 2015. The study was aimed at examining the impact of stock development on foreign portfolio investment in China.

2.5 Conceptual framework

The conceptual framework is the researcher's conceptualization of the relationship between the variables under study. The study conceptualization of the relationship financial development indicators and stock market performance is presented on the diagram as shown in figure 2.5

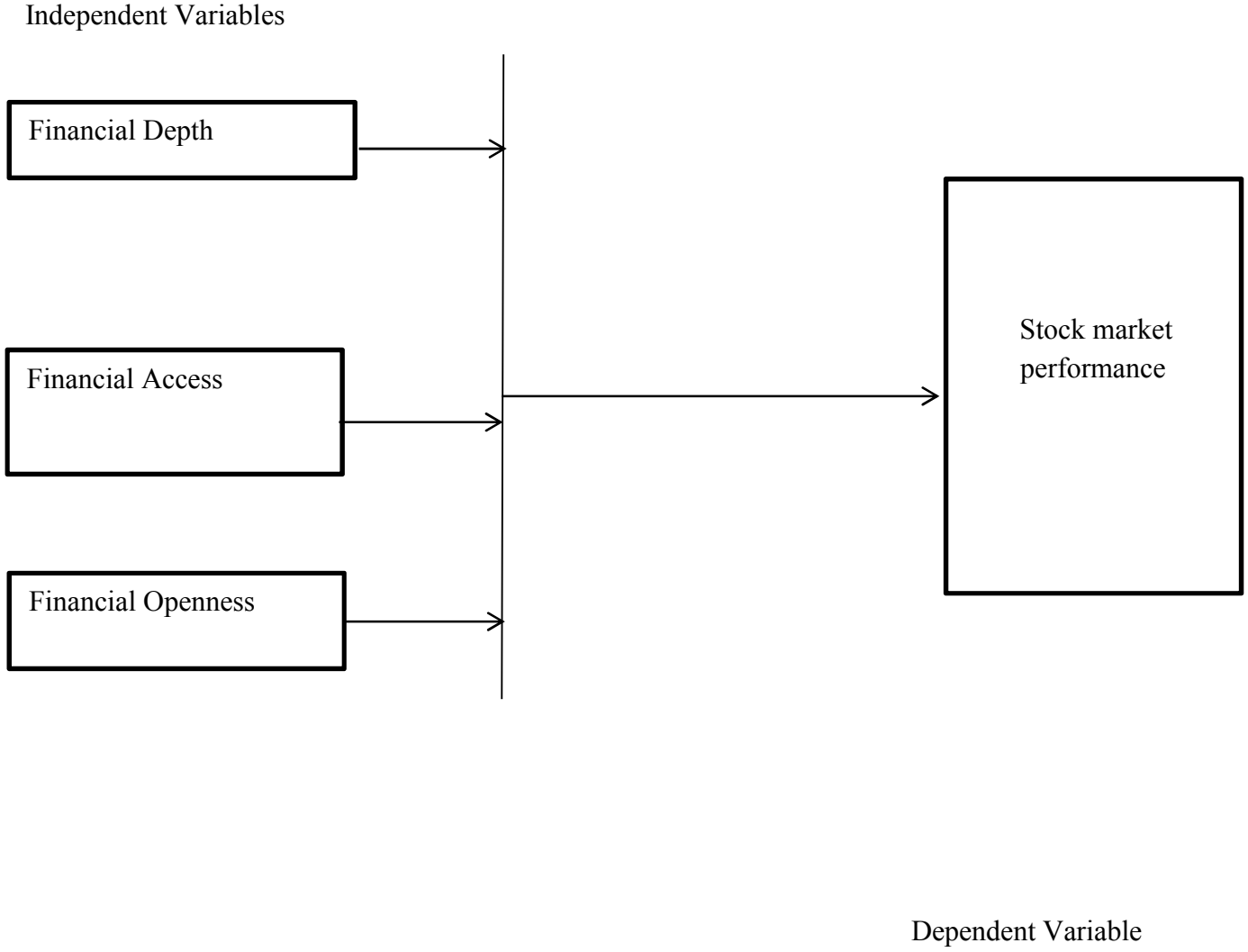


Figure 1.5 Conceptual framework

2.6 Operationalization of variables

Table 2.1 Operationalization of variables

Variables Type / Variable	**Operationalization**	**Specific Measure**	**Source**
Independent Variable Financial depth	Money Supply composed of coins, notes and short term deposits	Broad money supply(M2) in Kshs normalized with GDP	Odhiambo (2008)
Financial Access	Credit to private sector. Include financial resources (loans) administered by banks and other institutions	total credit advanced to private sector in Kshs normalized with GDP	Ngugi,Amanja and Maana,(2013).
Financial openness	Foreign Direct investment	foreign capital Inflows In Kshs	Anokye,A.M and Tweneboah, G (2009)

Dependent variable Stock market performance	Stock market index	NSE 20 share index in Kshs	Barassa, J (2014)

2.7 Chapter Summary

The chapter has detailed discussion on the theoretical and empirical evidence of the relationship between financial development and stock market performance. Numerous empirical studies point out diverse conclusion regarding the subject. There has been minimal evidence on the relationship between financial development indicators on the development of the Nairobi Securities Exchange and this study aims at filling the knowledge gap. Chapter three explains the research methodology employed in the study.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section discusses various methodological designs that can be used in concluding the research. The chapter also provides the method chosen and reasons for the selection.

3.1 Research Design

The study adopted a descriptive study design. Descriptive research design as defined by Strong & Hensley, (2002) aims at presenting the current situations in the environment. Previous research studies done by various scholars such as Odhiambo (2008), Akinboade (2000), Kemboi and Tarus (2012) also used descriptive design. The use of similar research design facilitated consistency and comparability.

3.2 Population and Sampling Frame

According to Ngechu (2004) population is defined as the total collection of elements in which a study aims to make some references. Saunders et al. (2003) also explains population as the full set of cases from which a sample is taken. The study used time-series secondary data for the period 2004-2018 in which quarterly data was considered.

3.3 Data collection instruments.

In investigating the relationship between financial development indicators and stock market performance in Kenya quarterly data was collected from Kenya National Bureau of statistics

(KNBS), Central bank of Kenya (CBK), World Bank as well as International monetary fund (IMF). A secondary data collection form was used for data collection.

3.4 Data analysis

To examine the relationship this study used an econometric model to investigate the nexus and relationship between financial development indicators and stock market performance in Kenya. Econometrics involves application of statistical models on economic theories in order to analyze and test economic relationships. Econometric models are used by economists to analyze the correlation or association between independent and dependent variables with intention of determining the causality. Econometric models do not offer a perfect match for cause-effect relationship for the variables, but they offer an approximate which assists in understanding and forecasting changes in the economy and policy makers in the government employ economic models broadly to make sense of what the implications on the effect on the stock market performance through varying assorted factors.

3.4.1 Testing stationarity

According to (Gujarati, 2003) time-series data is considered to be stationary only if the mean and variance are constant over time (t) and the measure of covariance between two time periods t and t+n, otherwise the data is said to be non-stationary.

Regression equations with non-stationary variable have numerous disadvantages such as their t-ratio and R-square being over-estimated by a large extent hence they become unreliable and invalid. To remedy the problem differencing the data is carried out.

A unit root test was done to identify stationarity. Unit root test was developed by Dickey and Fuller in 1970.

H0: There exist a unit root hence non-stationarity.

Reject null hypothesis if test statistic> the critical value

3.4.2 Lag Length selection

Before conducting Johansen test for cointegration, optimal lag length should be specified. According to Lutkepohl,(2005), lag length misspecification for the time series model leads to auto-correlated errors. The study employed five different selection criteria the sequential modified likelihood ratio (LR) test statistic, the Final Prediction Error (FPE) criteria, the Akaike information Criterion (AIC), the Schwarz Information Criterion (SC) and the Hannan-Quinn Information Criterion (HQ) information criterion. These criteria are also used in other studies (Athapattu and Jayasinghe (2010), Enders 2010). The optimal lag for the time series model is selected based on the lowest value of information criteria.

3.4.4 Co-integration model

Two variables are said to be co-integrated only if the variables have a long- term or structure relationship among them (Gujarati, 2003). To test co-integration Johansen test is performed (Johansen and Juselin 1990). The null hypothesis is being non-co-integration against the vice versa of existence of co-integration. Johansen's co-integration procedure focuses on the choice of lag length hence Vector auto regression model is initially fitted to the trend data to identify a suitable lag structure.

A time series model was fitted depending on Johansen co-integration test results. A vector error correction model was fitted since the results showed co-integration.

Co-integration model

$$\Delta SMP_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i}\, \Delta SMP_{t-1} + \sum_{i=1}^{n} \alpha_{2i}\, \Delta M2_{t-1} + \sum_{i=1}^{n} \alpha_{3i}\, \Delta CPS_{t-1} + \sum_{i=1}^{n} \alpha_{4i}\, \Delta FDI_{t-1}$$
$$+ \alpha_5 \Delta SMP_{t-1} + \alpha_6 \Delta M2_{t-1} + \alpha_7 \Delta CPS_{t-1} + \alpha_8 \Delta FDI_{t-1} + \mu_{1t} \ldots\ldots\ldots\ldots$$

$$\Delta SMP_t = \theta_0 + \sum_{i=1}^{n} \theta_{1i}\, \Delta SMP_{t-1} + \sum_{i=1}^{n} \theta_{2i}\, \Delta M2_{t-1} + \sum_{i=1}^{n} \theta_{3i}\, \Delta CPS_{t-1} + \sum_{i=1}^{n} \theta_{4i}\, \Delta FDI_{t-1}$$
$$+ \theta_5 \Delta MC_{t-1} + \theta_6 \Delta M2_{t-1} + \theta_7 \Delta CPS_{t-1} + \theta_8 \Delta FDI_{t-1} + \mu_{2t} \ldots\ldots\ldots\ldots\ldots\ldots$$

$$\Delta CPS_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i}\, \Delta SMP_{t-1} + \sum_{i=1}^{n} \beta_{2i}\, \Delta M2_{t-1} + \sum_{i=1}^{n} \beta_{3i}\, \Delta CPS_{t-1} + \sum_{i=1}^{n} \beta_{4i}\, \Delta FDI_{t-1}$$
$$+ \beta_5 \Delta SMP_{t-1} + \beta_6 \Delta M2_{t-1} + \beta_7 \Delta CPS_{t-1} + \beta_8 \Delta FDI_{t-1} + \mu_{3t} \ldots\ldots\ldots\ldots\ldots\ldots$$

$$\Delta FDI_t = \delta_0 + \sum_{i=1}^{n} \delta_{1i}\, \Delta SMP_{t-1} + \sum_{i=1}^{n} \delta_{2i}\, \Delta M2_{t-1} + \sum_{i=1}^{n} \delta_{3i}\, \Delta CPS_{t-1} + \sum_{i=1}^{n} \delta_{4i}\, \Delta FDI_{t-1}$$
$$+ \delta_5 \Delta SMP_{t-1} + \delta_6 \Delta M2_{t-1} + \delta_7 \Delta CPS_{t-1} + \delta_8 \Delta FDI_{t-1} + \mu_{4t} \ldots\ldots\ldots\ldots\ldots\ldots$$

Where

SMP= NSE 20-Share index.

M2= Broad money supply

CPS= Credit to private sector

FDI= Foreign Direct investment

ε_t=Error correction term.

$\alpha_0, \beta_0, \delta_0 \; and \theta_0$ Represent constants.

$\alpha_1 - \alpha_5, \beta_1 - \beta_5, \theta_1 - \theta_5 and \delta_1 - \delta_5$ Represents coefficients.

Δ Represents the differential operator in the equations.

t = time period.

μ_{it}= mutually uncorrelated white noise residuals

3.4.5 Vector Error Correction Model

On testing for co-integration a vector error correction model was fitted since the data set was co-integrated.

$$\Delta SMP_t = \delta_{10} + \delta_{11}\Delta SMP_{t-1} + \beta_{11}\Delta M2_{t-1} + \alpha_{11}\Delta CPS_{t-1} + \theta_{11}\Delta FDI_{t-1} + \varepsilon_{1t} \dots\dots\dots\dots\dots\dots$$

.

$$\Delta M2_t = \delta_{20} + \beta_{21}\Delta M2_{t-1} + \delta_{21}\Delta SMP_{t-1} + \alpha_{21}\Delta CPS_{t-1} + \theta_{21}\Delta FDI_{t-1} + \varepsilon_{2t} \dots\dots\dots\dots\dots\dots$$

$$\Delta CPS_t = \delta_{30} + \theta_{31} + \alpha_{31}\Delta CPS_{t-1} + \delta_{31}\Delta SMP_{t-1} + \beta_{31}\Delta M2_{t-1} + \Delta FDI_{t-1} + \varepsilon_{3t} \dots\dots\dots\dots\dots$$

.

$$\Delta FDI_t = \delta_{40} + \theta_{41}\Delta FDI_{t-1} + \delta_{41}\Delta SMP_{t-1} + \beta_{41}\Delta M2_{t-1} + \alpha_{41}\Delta CPS_{t-1} + \varepsilon_{4t} \dots\dots\dots\dots\dots\dots$$

Where

SMP= NSE 20-Share index

M2= Broad money supply

CPS= Credit to private sector

FDI= Foreign Direct investment

ε_t=Error correction term.

$\alpha_0, \beta_0, \delta_0 \; and \theta_0$ Represent constants.

$\alpha_1 - \alpha_5, \beta_1 - \beta_5, \theta_1 - \theta_5 and \delta_1 - \delta_5$ Represents coefficients.

Δ Represents the differential operator in the equations.

n= lag length.

t = time period.

μ_{it}= mutually uncorrelated white noise residuals

3.4.6 Granger Causality model.

This study employed granger causality to determine the direction of causality between financial development indicators and stock market performance in Kenya. Granger causality is normally applied to test the null hypothesis that financial development indicators do not cause stock

market performance as well the alternative.by adopting ECM-based multivariate Granger-causality model, this research follows similar studies; Odhiambo (2011), Narayan and Smyth (2008) by computing the following equations.

$$Y_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i}\, \Delta Y_{t-1} + \sum_{i=1}^{n} \alpha_{2i}\, \Delta X_{t-1} + \alpha_n \varepsilon_{t-1} + \mu_{1t} \ldots\ldots\ldots\ldots\ldots\ldots$$

$$\Delta X_t = \theta_0 + \sum_{i=1}^{n} \theta_{1i}\, \Delta Y_{t-1} + \sum_{i=1}^{n} \theta_{2i}\, \Delta X_{t-1} + \theta_n \varepsilon_{t-1} + \mu_{2t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

Where

Y= dependent variable (NSE 20-share index).

X= independent variables (money supply (M2), Credit to private Sector (CPS), Foreign Direct Investment (FDI)).

ε_t=Error correction term.

α_0 and θ_0 Represent constants.

$\alpha_1 \ldots\ldots, \theta_1 \ldots$. Represents coefficients.

Δ Represents the differential operator in the equations.

n= lag length.

t = time period.

μ_{it}= mutually uncorrelated white noise residuals.

3.4.7 Impulse Response Function

Impulse response function (IRF) explains the sign of the relationship and how long the effect lasts on the variable itself and on other variables. Impulse response tracks the response of variables in a time-series model to shocks applied to each variables error term.

3.4.8 Variance Decomposition

In order to explain proportion of the movements in the dependent variable (stock market performance) that are caused or brought about by their own shocks and shocks of the predictor variables variance decomposition test is performed. Unlike the granger causality test which show on the direction of the relationship between variable ,variance decomposition test identifies to what extent period steps ahead, a forecast error variance of the exogenous variable are justified by the exogenous variable. A shock on a variable affects its own course and is also transmitted to all other variables in the model. Variance decomposition is a measure of to what extent the S- steps ahead forecast error variance of each variable in the study is explained by innovations to each of the explanatory variables. S is 1, 2,…n. Error terms are ascribed to be innovations in time-series analysis.

3.5 Chapter Summary

In this section the methodology has been discussed in depth. Explanation on data to be employed in the research, data collection and analysis technique and research procedures have be provided in details. The next chapter provides the results and findings of the analysis.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter entails data analysis, presentation, interpretation and discussion. The data analysis was in congruence with the research objectives were identified, interpreted and inferences drawn on them the study sought to establish the relationship between financial development indicators and stock market performance.

The quarterly data from January 2004 to December 2018 was used on Kenya's economy containing 60 observations involving the following variables; stock market performance, financial depth, financial accessibility and financial openness. The variables are statistically analysed through descriptive statistics followed by performing short-run and long-run analysis using Johansen-Juselius co-integration test and the vector error-correction model (VECM).

4.2 Descriptive statistics

Table 4.2 Results of Descriptive statistics

	Stock Market Performance	**Financial Depth (M2)**	**Financial Access (CPS)**	**Financial Openness (FDI)**
Mean	3984.73	1625.069	2031.547	599279.2
Minimum	2576	788	712	26420

Maximum	5525	2976	4913	2881167
Std. Dev	854.6047	437.6831	1118.731	703390.9
Observation	60	60	60	60

Descriptive statistics provides a picture of the general over view of the data under study. The research computed the mean, standard deviation, minimum and maximum of the variables under study. The mean is a measure of the average of all the observations for a given variable in the data set. Standard deviation is defined as the measure of dispersion; it shows the extent to which the observations are distributed around the mean. The minimum and maximum values point out the lower and upper bounds of a variable's observations respectively. The graphical presentation in appendix III show the trend plots for the individual variables. The trend plots facilitate in visualizing the trend of each variable used in the study.

From the findings as indicated on table 4.2 the mean value of stock market performance measured by NSE 20 share index for the period under the study was 3984.738 units having a high point of 5525 units and a low point of 2576 units. Money supply (M2) a proxy for financial depth had a mean of 1625.07 units, a maximum value of 2976 billion units and a minimum value of 788 units. Financial openness measured by foreign direct investment (FDI) for the period under study had a mean value of 599279.5 units, a higher value of 2881167 units and lower value of 26420 units. Financial access measured by credit to private sector for the period under study had a mean value of 712 units, a maximum value of 4913 units and a minimum value of 2031.547 units.

4.3 Correlation Analysis

Table 4.3 Results of Correlation analysis

Variables	Stock Market Performance (SMP)	Financial Depth (M2)	Financial access(CPS)	Financial Openness (FDI)
Stock Market Performance (SMP)	1			
Financial Depth (M2)	-0.2274	1		
Financial access(CPS)	0.1730	0.20000	1	
Financial Openness (FDI)	-0.2014	-0.7841	-0.0288	1

The study used Pearson correlation matrix to describe the strength of the relationship between financial development indicators and stock market performance. Table 4.3 shows the correlation matrix analysis among the variables in the model. From the findings the coefficients indicate that all variables are correlated. This means that there is a significant relationship between financial development indicators and stock market performance in Kenya. These findings were in support of those of Awanja (2017) and Ngugi, Amanja and Maana (2013).

4.4 Diagnostic Test Results

Diagnostic tests were employed to find out whether it was suitable to carry out time series analysis. These tests include unit root test, co-integration test and model stability

4.4.1 Stationarity Test.

Table 4.4 Results of Unit root test

Dfuller MacKinnon approx. Variable	**ADF Test Statistic**	**1% Critical Value**	**5% Critical Value**	**10% Critical Value**	**p-value for Z(t) At level**	
Stock Market performance	-1.633	-3.567	-2.923	-2.596	0.4658	non-stationary
Financial Depth	-1.830	-3.567	-2.923	-2.596	0.3656	non-stationary
Financial Access	0.276	-3.567	-2.923	-2.596	0.1798	non-stationary
Financial Openness	-0.272	-3.567	-2.923	-2.596	0.9294	non-stationary

To identify stationarity of the variables unit root test was employed using the Augmented Dickey- Fuller (ADF) test. Rule of thumb states that when the p-value is greater than 0.05 reject the null hypothesis of stationarity. The test was performed on the data set showing non-stationarity. Table 4.4 above provides the results of the unit root test. Data on stock market performance, financial depth, financial access and financial openness were non-stationary concluding existence of unit root. According to the analysis the data set showed non-stationarity given that not all time series data for the variables were integrated of order zero. This necessitated to further test for co-integration

4.4.2 Optimal Lag length selection

Table 4. 5 Lag length selection test Results

Selection-order criteria

Sample:5-60

Number of observations=56

Lag	LL	LR	df	P	FPE	AIC	HQIC	SBIC
0	-2147		16		2.8e+28	76.8475	76.9036	76.9921
1	-1989.78	315.89	16	0.000	1.8e+26	71.778	72.0584	72.5013
2	-1978.31	22.95	16	0.115	2.1e+26	71.9396	72.4444	73.2416
3	-1159.02	38.574	16	0.001	1.9e+26	71.8222	72.5514	73.7029

4	-1931.36	55.329*	16	0.000	1.3e+26*	71.4056*	72.3591	73.865

The table above provides results for lag selection. A lag is selected if it is the most preferred various criteria. From the results the stars indicate lag four is the most suitable to use. FPE, AIC HQIC and SBIC point out that four lags to be used in the VEC model.

4.4.3 Co-integration Analysis

Table 4. 6 Co-integration Test Resuts

Trend : Constant			Number of observation=56		
Sample 5-60			Lags=4		
Maximum rank	**parms**	**LL**	**eigen value**	**trace statistic**	**5% critical value**
0	52	-1956.5508	-	50.3865	47.21
1	59	-1941.471	0.41641	20.9669*	29.68
2	64	-1936.2397	0.17042	9.7643	15.41
3	67	-1931.6743	0.15045	0.6335	3.76

4	68	-1931.3576	0.01125		

Co-integration is a statistical technique used in analyzing data that is non- stationary at level. This research employed Johansen test (1995) nomalised test for co-integration rank where the hypothesis test is:

H0:r=0 (no co-integration) vs Ha: r>0 (series co-integrated at least order 1)

H0:r≤1 (series co-integrated order 1) vs Ha: r>1 (series co-integrated at least by order

H0:r≤2 (series co-integrated order 2) vs Ha: r>2 (series co-integrated at least by order

Reject H0 if trace statistic >5% critical value.

Since trace statistic for *r=1* is less than the critical value (20.2269<29.68) we fail to reject that hypothesis that the system has one co-integrating equation and conclude the co-integration rank is one. The results prove that there is a significant trend among the variables hence there exist a long run relationship between Stock market performance, financial depth, financial access and financial openness in Kenya.

4.5 Vector Error-Correction Modeling

Table 4.7 Model Fitness Results

Sample: 5- 60	No. of obs = 56
Log likelihood = -1941.471	AIC = 71.44539
Det(Sigma_ml) = 1.53e+25	SBIC = 73.57925

			HQIC = 72.27268		
Equation	Parms	RMSE	R-square	Chi2	P>Chi2
D_Stock_Market Performance	14	338.987	0.4008	28.09926	0.0138
D_Financial Depth	14	168.573	0.5526	51.87814	0.0000
D_Financial Access	14	599.063	0.3466	22.2837	0.0730
D_Financial Openness	14	263536	0.3019	18.16634	0.1993

Having established that the variables in the financial deepening model are co-integrated, vector error correction model (VECM) is applied to derive short-run and long-run relationship of the financial deepening equation.

The R-squared shows the level of suitability of variables; stock market performance this month, is explained by 40.08 per cent of its own lags and the lags of financial depth, financial access and financial openness. Financial depth this month is explained by 55.26 percent of its own lags and the lags of stock market performance, financial access and financial openness. Financial access this quarter is explained by 34.66 percent of its own lags and the lags of stock market performance, financial depth and financial openness. Financial openness this quarter is explained by 30.19 percent of its own lags and the lags of stock market performance, financial depth and financial access. Financial performance and financial depth are significant at 5 percent level of

significance since the p-values are less than 0.05, while financial access and financial openness are significant at 10 percent level of significance.

Table 4.8 Error Correction Model (ECM) Results

	Coefficient	**Stand error**	**Z value**	**p>|z|**	**[95% Conf. Interval]**	
Stock Market performance (SMP)	1					
Financial Depth (M2)	-4.518593	1.133407	-3.99	0.000	-6.74003	-2.297156
Financial Access (PSC)	0.4401388	0.2047717	2.15	0.032	0.0387936	0.841484
Financial Openness (FDI)	0.002734	0.0007358	3.72	0.000	0.0012924	0.0041766
Con	-596.1947					

.

P value of the financial depth (M2) , P=0.000<0.05 while the coefficient is less than one implying that the coefficient on financial depth (M2) is negatively and statistically significant at 5% level of significance. This implies that financial depth moves downwards at a speed of 451 percent towards the equilibrium.

P value of the financial openness (FDI) , P=0.000<0.05 while the coefficient is greater than one implying that the coefficient on financial openness (FDI) is positively and statistically significant at 5% level of significance. This implies that financial openness is moving downwards at a speed of 0.2 percent towards the equilibrium. In the long term Financial access measured by credit to private sector (CPS) has a p-value 0.032 hence financial access is significant at 5 percent level of significance. Financial access is moving downwards at a speed of 44.01 per cent towards the equilibrium.

4.5.1 Checking for Goodness of fit.

Table 4. 8 Lagrange-Multiplier test Results

Lag	Chi2	df	Prob>Chi2
1	61.1470	16	0.00000
2	28.3992	16	0.02832
3	25.4121	16	0.03052
4	28.1290	16	0.06288
5	18.6635	16	0.28650

Godfrey LM test for auto-correlation, Jarque-Bera test for normality and stability test are used to check for the suitability of the model. The results are presented in the table 4.8.

Results from the LM test show no serial correlation since the p-values are greater than the 0.01 level of significant for lags one to five. From the stability test, the roots of accompanying matrix are within the unit circle hence model is a good fit.

4.6 Granger Causality Test

Table 4.9 Results for Granger causality test

Equation	Excluded	F	df	Prob
SMP	M2	2.197893	4	0.6994
SMP	CPS	1.680318	4	0.7943
SMP	FDI	7.915547	4	0.0947
M2	SMP	4.820321	4	0.3062
M2	CPS	1.983049	4	0.7389
M2	FDI	35.88637	4	0.0000
CPS	SMP	5.851085	4	0.2105

CPS	M2	8.903672	4	0.0636
CPS	FDI	1.505200	4	0.8257
FDI	SMP	7.477142	4	0.1127
FDI	M2	3.126942	4	0.5368
FDI	CPS	2.355543	4	0.6707

Under this section granger causality test results are presented showing the short-run relationship between financial deepening variables and stock market development variables. Granger causality test is significant in examining the short-run dynamic relationships among the model variables. Table 4.9 indicates the reported results which are based on lag 4 model which was selected objectively since quarterly data is applied in the study.

P-value of the chi-square statistic is greater than 0.1 for the stock market performance measured by NSE 20- share index equation with financial depth measured by money supply excluded, we conclude that stock market performance does not Granger cause financial depth and the reverse is true financial depth does not granger causes stock market performance in Kenya. P-value of the chi-square statistic is greater than 0.1 for the stock market performance equation with financial access measured by credit to the private sector excluded, we conclude that stock market

performance does not granger cause financial access and the reverse is financial access does not granger cause stock market performance in Kenya. P-value of the chi-square statistic is less than 0.1 for the stock market performance equation with financial openness (foreign direct investment) excluded, we conclude that stock market performance granger cause financial openness and the reverse is true financial openness does granger cause stock market performance in Kenya.

P-value of the chi-square statistic is greater than 0.1 for the financial depth equation with financial access excluded, indicating that financial depth does not granger cause financial access and the reverse is that financial access does granger cause financial depth in Kenya. P-value of the chi-square statistic is less than 0.1 for the financial depth equation with financial openness excluded, indicated that financial depth granger cause financial openness and the reverse is not true financial openness does not granger cause financial depth in Kenya.

P-value of the chi-square statistic is greater than 0.1 for the financial access measured by credit to the private sector equation with financial openness measured using foreign direct investment excluded, indicated that financial access does not granger cause financial openness and the reverse is true financial openness does not granger cause financial access in Kenya.

4.7 Impulse Response Functions (IRFs)

Table 4.10 Impulse Response Functions (IRFs) Results

Response Of Nse_20_Index:				
Period	Credit_To_Private	Foreign_Direct_Investment	Money_Supply	Nse_20_Index
1	60.73495	99.02752	14.54602	333.5927
2	67.74865	100.5595	26.04242	443.0847
3	94.12782	114.4901	31.87308	395.6262
4	123.1750	-17.49757	25.23784	355.6665
5	140.8186	-114.7881	7.050875	323.3030
6	173.3252	-84.74018	17.56336	224.6056
7	216.4302	-83.73709	44.43238	175.8988
8	247.7970	-85.27690	59.03787	163.7952
9	274.0183	-18.23445	82.15916	101.7755
10	285.7677	-16.83704	104.2717	67.10324
Response Of Money_Supply:				
Period	Credit_To_Private	Foreign_Direct_Investment	Money_Supply	Nse_20_Index
1	135.4495	4.508192	92.10184	0.000000

2	119.8182	30.55215	78.15784	-39.81610
3	110.5728	15.21292	64.31541	-41.66032
4	89.80175	141.0982	46.02415	-22.55279
5	107.0345	20.20730	62.46572	-69.96040
6	92.64929	-5.381002	58.95859	-20.98761
7	109.4693	15.11900	68.83437	-40.18761
8	101.1777	74.01147	60.52097	-5.696553
9	104.8898	59.07479	55.81311	6.246816
10	85.18736	82.29884	44.14140	-12.08336

Response Of Credit_To_Private:

Period	Credit_To_Private	Foreign_Direct_Investment	Money_Supply	Nse_20_Index
1	441.6802	0.000000	0.000000	0.000000
2	395.2974	-32.62036	-2.996618	-169.4519
3	362.2126	-38.81285	15.53263	-247.5372
4	351.8891	8.538721	-31.58945	-186.7743
5	606.0624	-8.119831	127.9711	-194.6494

6	577.4413	67.66825	138.1693	-294.6169
7	551.5762	-69.02902	114.0465	-307.8050
8	537.6667	182.9605	82.23789	-216.6291
9	596.4879	59.54274	128.3591	-348.5758
10	547.7325	-35.83936	109.7237	-278.0428
Response Of Foreign_Direct_Investment:				
Period	Credit_To_Private	Foreign_Direct_Investment	Money_Supply	Nse_20_Index
1	2798.478	251419.3	0.000000	0.000000
2	2501.195	165614.5	28444.16	-58349.72
3	-14453.94	57305.15	31759.48	-15641.98
4	13740.63	42950.85	54378.07	-72059.14
5	29094.60	66903.88	65970.15	-61129.65
6	27615.85	58918.01	47921.29	-23898.53

7	13505.87	142688.5	29461.16	-56551.03
8	18257.57	115436.0	44089.58	-105304.1
9	5197.404	27539.39	40276.42	-75987.89
10	19485.63	42374.98	48320.45	-75072.99

In this research impulse response functions are used to analyse the long- term relationship among the variables. Impulse response functions explain the behavior of a variable as a result of innovations (shocks) in the other variables. At time zero there are innovations in stock market performance (NSE 20 share index) caused by itself, stock market performance raises by 1 unit and 333.59 units one quarter later. Innovations in stock market performance measured by NSE 20-share index also cause a raise in financial depth measured by broad money supply and financial access measured by credit to private sector, and foreign direct investment which is a proxy for financial openness by 99.02 units in one quarter later.

Immediately when there are innovations on financial depth, financial depth increases by 92.102 units one quarter later. At time zero when the innovations are experienced stock market performance, financial access and financial openness are not affected however one quarter later financial access increases by 135.45 units, while financial openness increases by 4.508 units.

Stock market performance is not affected by the shocks after one period but experiences a decrease by 39.81 units in the second quarter.

Instant innovations on financial access, cause an increase of 441.68 units in financial access, while no effect is felt on stock market performance, financial depth as well as financial openness in the first quarter. There is a decrease of 3 units in financial depth, 32.62 units in financial openness financial depth and 169.45 units in the second quarter.

When there are innovations in financial openness immediately, no effect is experienced in financial openness as well as in the other variables, but later in the first quarter positive effects are expected. Financial openness increases by 251419 units, financial access by 2798.48 units. Financial depth and stock market performance were no effect by shocks in the first quarter.

When a shock is experienced in stock market performance, there is a permanent impact on stock market performance, financial depth, financial access and financial openness. The impulse on stock market performance is felt immediately up to the tenth quarter were the effects become permanent and significant. On financial openness the innovations have positive effects and insignificant from the third quarter, the same shock has a positive impact in financial depth and financial access, the effect is permanent significant for both financial depth and financial access.

An impulse on financial depth has a negative transitory effect on stock market performance from the first to the fourth quarter beyond which the innovations become permanent and insignificant. The same shock has a positive effect on itself, financial access and financial openness. The effect is permanent and insignificant from the third month for financial openness and after the fourth quarter in financial access.

An impulse on financial access has a negative transitory effect on financial depth from the first to the second quarter beyond which the innovations become permanent and insignificant. The same shock has a negative effect on itself, stock market performance and financial openness. The effect is permanent and insignificant from the third quarter and second quarter for financial openness and stock market performance respectively.

A shock on financial openness has a negative transitory effect on stock market performance from the first to the third month beyond which the innovations become permanent and insignificant. The same shock has a positive effect on itself, financial depth and financial access. The effect is permanent and insignificant from the third month for financial openness and after the second month in financial depth and financial access.

4.8 Forecast Error Variance Decomposition (FEVDs)

Table 4.11 Forecast Error Variance Decomposition (FEVDs) Results

Variance Decomposition of NSE_20_INDEX:					
Period	S.E.	Credit_To_Private	Foreign_Direct_Investment	Money_Supply	Nse 20_Index
2	580.2545	2.458785	5.915933	0.264273	91.36101
3	718.4701	3.320163	6.398043	0.369177	89.91262
4	811.6731	4.904387	5.059525	0.385942	89.65015
5	892.4090	6.547090	5.839965	0.325511	87.28743

6	940.4108	9.292718	6.070973	0.328009	84.30830
7	985.4649	13.28584	6.250577	0.501993	79.96159
8	1034.471	17.79480	6.351940	0.781262	75.07200
9	1078.266	22.83678	5.875036	1.299665	69.98851
10	1122.488	27.55416	5.443742	2.062195	64.93991

Variance Decomposition Of Money_Supply:

Period	S.E.	Credit_To_Private	Foreign_ Direct_ Investment	Money_ Supply	Nse_20_ Index
1	163.8586	68.33078	0.075695	31.59352	0.000000
2	223.2341	65.62454	1.913890	29.28033	3.181240
3	261.0810	65.91425	1.738752	27.47501	4.871984
4	314.2661	53.65731	21.35805	21.10715	3.877490
5	345.5782	53.96727	18.00490	20.72279	7.305037
6	363.2544	55.34813	16.31722	21.38944	6.945213
7	387.9679	56.48285	14.45648	21.89911	7.161560
8	412.2244	56.05542	16.02874	21.55320	6.362639
9	433.0990	56.64741	16.38136	21.18634	5.784887
10	451.3305	55.72586	18.40969	20.46581	5.398644

Variance Decomposition Of Credit_To_Private:

Period	S.E.	Credit_To_Private	Foreign_Direct_ Investment	Money_ Supply	Nse_20_ Index
1	441.6802	100.0000	0.000000	0.000000	0.000000
2	617.3560	92.18452	0.279194	0.002356	7.533932
3	758.5175	83.86902	0.446777	0.043494	15.64071
4	857.3973	82.48407	0.359587	0.169784	16.98655
5	1075.534	84.17184	0.234218	1.523613	14.07032
6	1265.180	81.66000	0.455329	2.293744	15.59092
7	1420.363	79.87143	0.597461	2.464623	17.06649
8	1547.153	79.39385	1.902002	2.359760	16.34439
9	1700.296	78.04321	1.697445	2.523730	17.73562
10	1811.532	77.89514	1.534524	2.590176	17.98016

Variance Decomposition Of Foreign_Direct_Investment

Period	S.E.	Credit_To_Private	Foreign_Direct_ Investment	Money_ Supply	Nse_20_In dex
1	251434.9	0.012388	99.98761	0.000000	0.000000
2	308005.9	0.014850	95.54343	0.852841	3.588884
3	315616.5	0.223868	94.28784	1.824782	3.663510
4	331356.1	0.375064	87.22332	4.348675	8.052945
5	351010.5	1.021282	81.36183	7.407588	10.20930
6	360984.7	1.550872	79.59172	8.766192	10.09121

7	393596.7	1.422264	80.09119	7.933974	10.55258
8	426157.2	1.396777	75.65740	7.838265	15.10756
9	435651.0	1.350796	72.79547	8.355084	17.49865
10	447144.2	1.472152	69.99946	9.098888	19.42950

The factor error variance decomposition determines the extent by which the forecast error variance of a variable is accounted for by exogenous innovations to the other variables. From table the results support that their exist relationships between the variables in the study and the degree of the forecast error of one variable attributed by another. Forecast errors add up to a hundred percent showing that the variables are exogenous and they are explained by innovations from the variables. In the first quarter stock market performance explained 89.03 % of its own variance. The degree of variance that is caused by other variables in the second quarter are: financial depth explains for 0.26%, financial access accounts for 2.46 % while financial openness attributes for 5.93 %.

4.9 Discussion of Findings

The R-squared shows the level of suitability of variables; stock market performance this quarter, is explained by 40.08 per cent of its own lags and the lags of financial depth, financial access and financial openness. Financial depth this quarter is explained by 55.26 percent of its own lags and the lags of stock market performance, financial access and financial openness. Financial access this quarter is explained by 34.66 percent of its own lags and the lags of stock market performance, financial depth and financial openness. Financial openness this quarter is explained by 30.19 percent of its own lags and the lags of stock market performance, financial depth and financial access. Stock market performance and financial depth are significant at 5 percent level of significance since the p-values are less than 0.05, while financial access and financial openness are significant at 10 percent level of significance.

P value of the financial depth (M2) , $P=0.000<0.05$ while the coefficient is less than one implying that the coefficient on financial depth (M2) is negatively and statistically significant at 5% level of significance. This implies that financial depth moves downwards at a speed of 451 percent towards the equilibrium. The findings from this study were consistent with those of Nalin (2014), the study concluded that money supply and inflation rate had a negative effect on stock market development.These results are inconsistent with studies done by Ahmed (2011) and Ting et al (2012). Ahmed (2011) recognized that money supply as a key factor in the growth of any stock market. His study examined the long term interaction of money supply, real gross domestic product, stock prices and stock market returns in Sudan. The findings supported that money supply has an impact on stock market return in the long term. Ting et al (2012) observed a positive relationship between interest rate, money supply and stock market returns in Malaysia.

In the long term Financial access measured by credit to private sector (CPS) has a p-value 0.032 hence financial access is significant at 5 percent level of significance. Financial access is moving downwards at a speed of 44.01 per cent towards the equilibrium. This was consistent with other studies; Ngugi, Amanja and Maana (2013) found a positive relationship between capital market and financial accessibility in Kenya. El-Nader and Al-Raimony (2013), Bayar (2016).El-Nader and Al-Raimony (2013) researched on macro-economic determinants affecting stock market development in Jordan supported the credit to private sector had an influence on the stock market development. Bayar (2016) concluded that financial investment, economic growth. Inflation, stock market liquidity, financial depth and financial access have an impact on stock market development. Munene (2017) examined the effect of financial deepening on capital market development in Kenya. The study uses data for the period 1990-2015. Data is analyzed through ARDL-ECM model. The findings point out that financial depth and market liquidity have a positive significant effect on capital market development. However financial access and openness have a negative significant effect on capital market development in Kenya. The researcher concluded there is a positive significant interaction between financial deepening and capital market development in Kenya.

P value of the financial openness (FDI) , $P=0.000<0.05$ while the coefficient is greater than one implying that the coefficient on financial openness (FDI) is positively and statistically significant at 5% level of significance. This implies that financial openness is moving

downwards at a speed of 0.2 percent towards the equilibrium. This was consistent with other studies; Eniekezimene (2013), Onyesi,Odo and Anoke (2016) and Haider et al (2017) found a positive significant relationship between financial openness measured by foreign direct investment and stock market development measured by stock market returns. The study supported financial liberalization theory, elimination of trade and financial barriers is important for stock market to grow. Financial openness would be important to stock market performance since cash inflows would be directed to investors in the stock market rather than being deposited in banking institutions. Therefore a rise in stock prices attributed to increase foreign investments will cause a rise in stock market performance and a drop in stock prices attributed to decrease in foreign investments will cause a poor performance of the stock market

Onyeisi, Odo and Anoke (2016) did a study on the role of foreign investment inflows on stock market deepening in Nigeria. The findings showed long-run relationship between foreign investments have a positive relation to stock market advancement in Nigeria. Eniekezimene (2013) found out that foreign direct investment led to the growth of stock market in Nigeria. Chukwuemeka et al (2012) examined the determinants of stock market development. The study used finite distributed lag model and observed that foreign investment has a long term interaction with stock market performance for the Nigerian Market.

However the findings from this research are contrary to those reported from Aduda Jo (2012) in his study, 'The determinants of stock market development in Kenya' regressed macro-economic factors against stock market development. The regression analysis concluded that stock market liquidity and domestic savings were significant determinants on stock market development. However foreign investment measured by private capital inflows did not have any significant relationship with stock market performance. In addition Ezeola et al. (2009) in a study on the

relationship between stock market development and both foreign and local portfolio investment in the Nigerian stock market found that foreign investments had a negative effect on the stock market while local investments had a positive effect on the stock market.

A bi-direction causality relationship between stock market performance and foreign direct investment at 10% level of significance was found. However there was no causality relationship running from money supply, credit to private sector to stock market performance.

CHAPTER 5

SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Introduction

Chapter five entails a summary of the study in chapter four, conclusion and limitations encountered while undertaking the research. Further the chapter suggests policy recommendations that policy makers can implement to accelerate the country's stock market performance. As a conclusion the study highlights areas for further studies.

5.2 Summary of the study

Using quarterly time series data for the period between 2004 and 2018, the study focuses on determining the relationship between financial development indicators factors and stock market performance in Kenya.

Among other objectives of the study was to investigate the relationship between financial depth and stock market performance in Kenya. In the study financial depth was measured by money supply (M2) and NSE 20 share index as a proxy for stock market performance. Using VECM approach the research found that there is a positive relationship between financial depth and NSE 20 share index both in the long-term.

Secondly the research investigated the relationship financial access measured by credit to private sector and stock market performance measured by NSE 20 share index. The VECM analysis showed that financial access does have a significant impact on the stock market performance both in the short-term and the long-term.

Lastly the research investigated the impact of financial openness measured by foreign direct investment and stock market performance measured by NSE 20 share index. The VECM analysis showed that financial openness has a positive significant impact on the stock market performance both in the short-term and the long-term.

5.3 Conclusions

The research concluded that there exists a significant relationship between financial development indicators; depth, access, openness and stock market performance measured by NSE 20 share index. There is need to boost financial access by financial intermediaries. More emphasis should be directed towards provision of better financial services; loans and deposits by banks which are the major plays to investors both in the formal and informal sector. The central bank of Kenya while implementing monetary policies should consider the stock market since they will have an impact on the stock market performance. Participation of foreign investors in the Kenyan stock market has promoted growth of the market. Foreign investments have played a major role in increasing stock market liquidity, raised price earnings ratio which has led to the minimization of cost of capital in Kenya. Foreign investments cause increase in stock prices due to the created demand by both the local and foreign investors for the lucrative stocks available in the Nairobi securities Exchange.

5.4 Policy implications and Recommendations

From the findings a raise in financial depth measured by money supply leads to stock market performance measured by NSE 20 share index. The Central Bank of Kenya needs to adopt an

expansionary monetary policy to increase money supply in the economy by reducing the level of real interest rates.

Further financial openness measured by foreign direct investment has a positive impact on stock market performance measured by NSE 20 share index. There is need for the Capital Market Authority to encourage locals to venture in stock market. This can be done through educating investors and awareness campaigns. Local investors' participation will foster stock liquidity and increase confidence to the stock market. This may further attract foreign investments boosting a mutually beneficial cycle. Further increased local investments will insulate the stock market from unexpected shocks from foreign investment outflows .

5.5 Limitation of the study

This study faced a literature gap since there are very few studies that have been carried out on the financial development indicators directly on the stock market performance and more so in the developing economies. The research was limited to the four selected variables.

5.6 Areas recommended for further studies

Since this research focused on the relationship between financial development indicators on stock market performance in Kenya, there is need for comparative studies across developing countries such as Uganda, and Tanzania among other African countries. In addition other data

analysis methods employed to analysis the growth of stock market such as the GARCH model which focuses on the volatility given that stock market is known to be volatile.

Further studies could be done employing different financial deepening indicators not used in the research to investigate their impact on stock market performance in Kenya.

REFERENCE

Abu-Mhareb, E. and Al-Fayoumi, N. (2011). "Stock Markets, Banks and Economic Growth: Empirical Evidence from Jordan", Master Thesis, University of Jordan

Acemoglu, D., Johnson, S. And Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation.American Economic Review, 91.

Adebowale, E. A., & Akosile, A. I. (2018). Interest Rate, Foreign Exchange Rate, and Stock Market Development in Nigeria. Binus Business Review, 9(3).

Adam, A.M.,Tweneboah, G. (2009). "Foreign Direct Investment and Stock Market Development: Ghana's Evidence", International Research Journal of Finance and Economics, 26.

Adewuyi, Bankole, and Arawomo. (2007). What Determines Saving in the Economic Community of West African State (ECOWAS)? Journal of Monetary and Economic Integration.

Aduda Jo. 'The Determinants of stock market Development: The case for the Nairobi Stock Exchange.' In international Journal of Humanities and Social Science, Centre for promoting ideas, 2012.

Al-Jarrah, I., Al-Zu'bi, Z., Jaara, O. and Alshurideh, M. (2012). "Evaluating the Impact of Financial Development on Economic Growth in Jordan", International Research Journal of Finance and Economics, 94.

Asongu AS (2010). Stock Market Development in Africa: Do all Macroeconomic Financial Intervenediary Determinant Matters MPRA paper 26910.

Anokye, A. M. and Tweneboah, G (2009), Foreign Direct Investment and Stock Market Development: Ghana's Evidence, International Research Journal of Finance and Economics,26.

Agbetsiafa, D.K. (2003), "The Finance Growth Nexus: Evidence from Sub-Saharan Africa", International Advances in Economic Research, 9(2).

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

Ang, J.B. (2008), "What are the Mechanisms Linking Financial Development and Economic Growth in Malaysia?",Economic Modelling, 25(1).

Bayar, Y. (2016). Macroeconomic Determinants of Stock Market Development: Evidence from Borsa Istanbul. Financial Studies.

Bekaert, G. & Campbell, H. (2000).Foreign speculators and emerging equity markets. Journal of Finance, 55(2), 565-613.

Bekaert, G., & Harvey, C. R. (2002). Foreign speculators and emerging equity markets. Journal of Finance, 55, 565-613. https://doi.org/10.1111/0022-1082.00220.

Bodie. Z. Kane, A. and Marcus. A. (2008). Essentials of Investments. McGraw –Hill International ed, 7ed, New York, USA

CBK, CMA, IRA, RBA, SASRA. (2011). Kenya`s Financial sector Stability Report.

Central Bank of Kenya. (Various years). Bank Supervision Annual Report. Nairobi: Central Bank of Kenya press.

Chancharat, S., Valadkhani, A., and Harvie, C. (2007), the Influence of International Stock Markets and Macroeconomic Variables on the Thai Stock Market. Faculty of Commerce - Papers (Archive), University of Wollongong.

Chinn, M. D. And Ito, H. (2002). Capital account liberalisation, institutions and financial development: Crosscountry evidence.National Bureau of Economic Research Working PaperNo: 8967.

Christopoulos, D.K. and E.G. Tsionas (2004), "Financial Development and Economic Growth: Evidence from Panel Root and Cointegration Tests", Journal of Development Economics.

Chuah, H. L. and Thai, V. 2004. 'Financial Development and Economic Growth: Evidence from Causality Tests for the GCC countries', IMF Working Paper, no. WP/04/XX.

Darrat, Ali 1999, 'Are financial deepening and economic growth causally related? Another look at the evidence', International Economic Journal, vol. 13, no. 3.

Demetriades, P. & Rousseau, P. L. (2011). The changing face of financial development.

Ebele Sabina Nsofor, 2016. "Market Liquidity as a Determinant of Stock Market Development in Nigeria," International Journal of Empirical Finance, Research Academy of Social Sciences.

Egbetunde, T. (2009). Financial intermediation and economic growth in sub-Saharan Africa (1980-2005). M. Sc. thesis, Obafemi Awolowo University, Nigeria.

Eita, J. H. (2011) Determinants of Stock Market Prices in Namibia. Working Paper 209 Monash University.

Ekeocha, P. C., Ekeocha, C. S., Victor, M., & Oduh, M. O. (2012). Modelling the long run determinants of foreign portfolio investment in Nigeria. Journal of Economics and Sustainable Development, 3(8).

El-Nader HM, Al-Raimony AD (2013). The Macroeconomic Determinants of Stock Market Developments in Jordan, International Journal of Economic and Finance.

Enders, W. 2010, Applied econometric time series, 3rd edn, John Wiley and Sons, New York.

Engle, R.F. and Granger, C.W. J. (1987). Cointegration and error correction representation estimation, and testing. Econometrica, 55(2).

Eniekezimene, A. F. (2013). The impact of foreign portfolio investment on capital market growth: evidence from Nigeria. Global Business and Economics Research Journal,

Fridah Karimi Gatua (2013), Analysis Of Share Price Determinants At Nairobi Securities Exchange Masters Thesis Nairobi University 2013.

Gab-Je, J. (2002). Foreign equity investment in Korea, presentation at the association of Korean economic studies

Garcia, V.F. and Liu, L. (1999) Microeconomic Determinants of Stock Market Development, Journal of Applied Economics, 2(1), 29-59.

Ghirmay, T. (2004), "Financial Development and Economic Growth in Sub-Saharan African Countries: Evidence from Time-Series Analysis", African Development Review,1(3)6.

Goldsmith, R. W. (1969). Financial structure and development. New York: Yale University press.

Graff, M. (1999), "Financial Development and Economic Growth: A New Empirical Analysis", Dresden Discussion Paper Series in Economics, Nr. 5/99.

Gujarati, D. (2003). Basic Econometrics. United States Military Academy, West Point.

Haider, M. A., Khan, M. A., Saddique, S., & Hashmi, S. H. (2017). The Impact of Stock Market Performance on Foreign Portfolio Investment in China. International Journal of Economics and Financial Issues, 7(2).

Hathaipat, A., & Chaiyuth, P. (2013). Foreign ownership and stock return volatility: Evidence from Thailand, 9(5), 96-121.

Hye QMA, Wizarat S (2013) Impact of Financial Liberalization on Economic Growth: A case study of Pakistan. Asia Economic and Financial Review 3.

Idowu, A. and Babatunde, M.A. (2012) Effect of Financial Reforms on Capital Market Development in Nigeria. Asian Journal of Business and Management Sciences, 8.

Ita, J.J. and Duke, J. (2013) Macroeconomic Factors That Influence Stock Market Development in Nigeria. International Journal of Business Management and Review.

Johansen, S. and Juselius, K. (1990). Maximum likelihood estimation and inference integration with application to demand for money. Oxford, Bulletin of Economics and Statistics, 52.

Jung, W.S. (1986), "Financial Development and Economic Growth: International Evidence", Economic Development and Cultural Change, 35(2).

. Kagochi, J. M. (2013). Financial Development and Economic Growth in Kenya: Evidence from Expanded Neoclassical Growth Approach. *Asian-African Journal of Economics and Econometrics*, *13*(2), 117-131.

Kemboi, J.K. and Tarus, D.K. (2012) Macroeconomic Determinants of Stock Market Development in Emerging Markets: Evidence from Kenya. Research Journal of Finance and Accounting, 3.

Kim,S.,and Doo Young. Y.(2009). Do Capital inflows Matter for Asset Prices ? The Case of Korea. Asian Economic Journals, 23 (2).

King, R.G. and R. Levine (1993a), "Finance and Growth: Schumpeter Might be Right", Quarterly Journal of Economics, 108 (3).

King, R.G. and R. Levine (1993b), "Finance, Entrepreneurship, and Growth: Theory and Evidence", Journal of Monetary Economics, 32(3).

Kularatne, C 2001, 'An examination of the impact of financial deepening on long-run economic growth: an application of a VECM structure to a middle-income country context', Trade and Industrial Policy Strategies, annual forum.

Kwaku, Acheampong & Wiafe, emmanuel Agyapong. (2013). FDI and Stock Market Development: Evidence from Ghana. International Journal of Finance & Policy Analysis.

Law, S.H., Habibullah. M.S. (2009). "The Determinants of Financial Development: Institutions, Openness and Financial Liberalisation", South African Journal of Economics, 77(1),

Loizides, J. and G. Vamvoukas (2005), "Government Expenditure and Economic Growth: Evidence from Trivariate Causality Testing", Journal of Applied Economics, 8(1).

Luciana, R., Roberto, M. & Sergio, D. (2010). Stock returns and foreign investment in Brazil, Applied Financial Economics.

Lütkepohl, H. (2005). New introduction to multiple time series analysis.

Maku, O. E. & Atanda, A. A. (2010). Determinants of Stock Market Performance in Nigeria: Long-run Analysis.

Matadeen, S.J. (2017) The Macroeconomic Determinants of Stock Market Development from an African Perspective. Theoretical Economics Letters, 7, 1950-1964

Marc SC (2018) Impact of Financial Liberalisation on the Financial Development of Eight Countries Member of SADC. J Glob Econ 6: 287.

Maysami, R. C., and Koh, T. S. (2000) A Vector Error Correction Model of the Singapore Stock Market, International Review of Economics and Finance, 9:

McKinnon, R 1973, Money and capital in economic development, Brookings Institutions,

Washington, DC.

Merton, R. C. (1987).A simple model of capital market equilibrium with incomplete information. Journal of Finance, 42.

Munene Agnes Wanja(2017), 'Financial Deepening And Capital Market Development In Kenya', DPhil Thesis University 2017.

Ndikumana, L 2000, 'Financial Determinants of Domestic Investment in Sub-Saharan Africa: Evidence from Panel Data', World Development, vol. 28, no. 2.

Nwachkwu Tochukwu, E., and Odigie, P. (2009). What Drives Private Savings in Nigeria. In A Paper Presented at the Centre for the Study of African A Paper Presented at the Centre for the Study of African Economies (CSAE) Conference, University of Oxford, March.

Odhiambo, N. M.(2004). Is financial development still a spur to economic growth? Causal evidence from South Africa, Savings and Development.

Odhiambo, N. M. (2007). Supply-leading versus demand-following hypothesis: Empirical Evidence from Three SSA Countries, African Development Review, 19.

Odhiambo, N. M. (2008). 'Financial depth, savings and economic growth in Kenya: A dynamic causal linkage,' Economic Modelling, Elsevier, vol. 25(4)

Ogola, D. O. (2016). The impact of financial development on economic growth in Kenya. *An unpublished masters project of the University of Nairobi*.

Okuyan, H. A., & Erbaykal, E. (2011). The relationship between foreign investment and stock returns in Instabul Stock Exchange. Journal of International Finance, 12(2), 256-264.

Onyeisi, O. S., Odo, I. S. & Anoke, C. I. (2016).Foreign Portfolio Investment and Stock Market Growth in Nigeria.Developing Country Studies.

Onwumere, J. U. J., Ibe, I. G., Ozoh, F.O. & Mounanu, O. (2012). The impact of financial deepening on economic growth: Evidence from Nigeria. Research Journal of Finance and Accounting. 3(10).

Owen, N. (2013). Foreign portfolio flows and stock market performance in Kenya: Case of Nairobi securities exchange. University of Nairobi.

Ozurumba , B.A. (2012). The Impact of Stock Market Returns on Foreign Portfolio Investment in Nigeria. LOSR journal of Economic and Management (LOSRJEM), 2(4).

Pesaran, M. H, Shin, Y and Smith, R. J 2001, 'Bounds testing approaches to the analysis of level relationships', Journal of Applied Econometrics, vol. 16.

Prinsloo, J.W., (2000).The Saving Behavior of the South African Economy. Occasional Paper No 14, South African Reserve Bank. South Africa.

Rajan, R. G. and Zingales, L. (1998). Financial Dependence and Growth.American Economic Review, 88.

Republic of Kenya. (2007). Kenya Vision 2030: A Globally Competitive and Prosperous Kenya. Nairobi: Government Printer.

Republic of Kenya. (Various years). The Economic Survey. Nairobi: Government Printer.

Robinson, J. 1952, The Generalization of the General Theory', in the Rate of Interest and Other Essays. MacMillan, London.

Romer, Paul 1990, 'Endogenous technical change', Journal of Applied Economics, vol. 98.

Saleryd, H. And Vlachos, J. (2002). Markets for risk and openness to trade: How are they related.Journal of International Economics, 57.

Samy Ben Naceur, Samir Ghazouani, Mohamed Omran, (2007) "The determinants of stock market development in the Middle-Eastern and North African region

Schumpeter, J.A. (1911), The Theory of Economic Development, Harvard University Press: Cambridge, MA.

Shan, J.Z. and A.G. Morris (2002), "Does Financial Development 'Lead' Economic Growth",

International Review of Applied Economics, 16(2).

Shan, J.Z.,A.G. Morris and F. Sun (2001), "Financial Development and Economic Growth: An Egg and Chicken Problem?", Review of International Economics, 9(3).

Sharpe, W., & Jeffery, B. (2003). Investments, (6 ed.).Prentice hall of India private

limited, New Delhi.

Shaw, E. S 1973, Financial deepening in economic development, Oxford University Press, New York.

Su, D.T.; Bui, T.M.H. & Nguyen, V.B. (2016). Determinants of Stock Market Development: The Case of Developing Countries and Vietnam. Journal of Economic Development, 24(1).

Ting, H. L., Feng, S. C., Weng, T. W., and Lee, W. K. (2012). Macroeconomic Determinants of the stock Market Return: The Case in Malaysia. Kuala Lumpur: Universiti Tunku Abdul Rahman.

Tokat, Y., & Wicas, N. W. (2004). Investing in emerging stock markets. *The Journal of Wealth Management*, *7*(2), 68-80.

Wongbangpo, P. and Sharma, S.C. (2002), Stock Market and Macroeconomic Fundamental Dynamic Interactions: ASEAN–5 Countries. Journal of Asian Economics, 13.

Xu, Guangdong and Binwei Gui 2014. 'Does Financial Repression Retard China's Economic Growth? An Empirical Examination', in Niels Philipsen and Guangdong Xu (eds.), The Role of Law and Regulation in Sustaining Financial Markets. Oxford: Taylor & Francis.

Zhou, Wubiao 2009. 'Bank Financing in China's Private Sector: The Payoffs of Political Capital', World Development 37 (4).

Appendix I. Summary of Literature and Research Gaps

Author	Study	Methodology	Findings	Research gaps	Addressing the research gap
Ngugi, Amanja and Maana,(2013	Capital market, financial deepening and economic growth	OLS model	There was positive correlation between capital market, and the financial access and depth factors	did not establish the direction of causality between financial deepening and capital market development Used OLS Model	Use of Granger test to show direction Use VECM Model
NPR Deyshanppriya(2016)	The Causality Direction of the Stock	GMM Dynamic model	there is statistically significant	Used economic growth as	Used stock market developme

	Market–Growth Nexus: Application of GMM Dynamic Panel Data and the Panel Ganger Non-causality Tests	Panel Ganger Non-causality Tests	relationship between stock markets and economic growth in both markets. developing markets support the finance-led growth while the developed markets supported bi-directional causality on stock market development and economic growth.	dependent variable GMM Dynamic model	nt as the dependent variable Use VECM Model

Matadeen, S.J.(2017)	The Macroeconomic Determinants of Stock Market Development from an African Perspective.	PVECM model	economic growth, development of the banking sector, stock market liquidity, investment and macro-economic stability were important factors of stock market development in the region.	Used macro-economic variables as independent variable. Failure to establish the direction of link between financial deepening and capital market development	Use of financial deepening as independent variables Show direction of link financial deepening and stock market developme nt
Aduda Jo , (2012)	The Determinants of stock market Development: The case for	Multiple regression	there was significant relationship stock market liquidity and domestic	Used Ordinary Least Square Method	VECM model for analysis

	the Nairobi Stock Exchange.'		savings on stock market development. However foreign direct investment measured by private capital inflows did not have any significant relationship with stock market development		
Kwaku, Acheampong & Wiafe, emmanuel	FDI and Stock Market Development:	ARDL model	FDI had a positive significant	Used FDI variable as independent	Used of financial deepening

Agyapong,(2013)	Evidence from Ghana.		effect on stock market development	variables Used ARDL	as independent variables. VECM model
A Wanja (2017)	Financial deepening and capital market development in Kenya	ARDL model	financial depth and market liquidity have a positive significant effect on capital market development. However financial access and openness have a negative	employed ARDL model	vector error correction model Use of different financial deepening proxies

			significant effect on capital market development in Kenya.		
Naceur et al., (2007)	The determinants of stock market development in the Middle-Eastern and North African region"	Ordinary Least Square Model	savings rate, financial intermediary, stock market liquidity and the stabilization variable are significant determinants of stock market development	employed Ordinary Least Square method	The study employed vector error correction model
Kim and Young (2009)	Do Capital inflows Matter for	vector auto regression model	foreign portfolio investment	employed vector auto regression	will employ vector

	Asset Prices ?	(VAR)	affected the demand for stock returns	model (VAR)	error correction model (VECM)
Onumwere (2012)	Financial development and economic growth	Multiple regression	broad money velocity and market liquidity did granger cause the gross domestic product	Used Ordinary Least Square Method Used economic growth as dependent variable	Use of VECM Use of stock market developme nt as dependent variable
Odhiambo (2008)	Financial depth, savings and economic growth in Kenya: A dynamic causal linkage	vector error correction model. (VECM)	the long-run economic growth did granger cause financial deepening	Used economic growth as dependent variable	Use of stock market developme nt as dependent variable
Ndikumana (2000)	'Financial	vector error	there existed	Used	Use of

	Determinants of Domestic Investment in Sub-Saharan Africa: Evidence from Panel Data', World Development	correction model	a positive and significant relationship between economic growth and financial deepening (liquid liabilities of banks). Other variables were statistically insignificant i.e. credit by banks, credit to the private sector and the overall index	economic growth as dependent variable	stock market developme nt as dependent variable
Sin-Yu Ho,	Determinants	Theoretical	saving rate,	Used	this study

Bernard Njindan Iyke, (2017)	of stock market development:	model	gross domestic investment, private capital flows, financial intermediary development and foreign portfolio investment are significant determinants of stock market development	Theoretical model	will apply vector error correction model for analysis
Kemboi and Tarus(2012)	Macroeconomic factors and stock market development	Vector error correction model	level of income, development of the banking institution	Used macroeconomic variables as independent variables	Used of financial deepening as independen

			and stock market liquidity are significant factors of stock market development in Kenya	Used a small sample size of 9 years	t variables Use a larger sample of 28 years
Mohd (2012)	Investigating the causal relationship by focusing on the non-bank financial institutions (NBFIs) in Malaysia	ARDL model	development of non-bank financial intermediaries' granger causes economic growth. the study concluded that there is a long-run relationship	Used economic growth as dependent variable Used ARDL model	Used stock market development as the dependent variable Use of VECM model

			between NBFIs and economic growth.		
Mohen and Maysam (2012)	Relationship between financial deepening, energy consumption and economic growth	ARDL bounds test	existed co-integration within real GDP , energy consumption, capital stock, oil revenues and credit to the private sector which were the proxies for financial development in the study	ARDL bounds test Used economic growth as dependent variable	Use of VECM model Used stock market developme nt as the dependent variable
Athapattu and	The causality	vector error	observed a	Used	Used stock

Jayasinghe (2010)	direction of the stock market-growt nexus	correction model	long-run relationship between the development of the stock market and economic growth, further confirmed the finance-led growth hypothesis.	economic growth as dependent variable	market developme nt as the dependent variable
Gab-Je, J. (2002).	Foreign equity investment in Korea	vector auto regression test	foreign investments contributed to stock price volatility	the study employed foreign equity as the independent variable	this study will use financial deepening variables as the independen t variable
Owen, N. (2013).	Foreign	ARIMA	Foreign	the study	this study

	portfolio flows and stock market performance in Kenya	model	portfolio investments in the local market boost stock prices.	employed foreign equity as the independent variable	will use financial deepening variables as the independen t variable

Appendix II. DATA COLLECTION SHEET

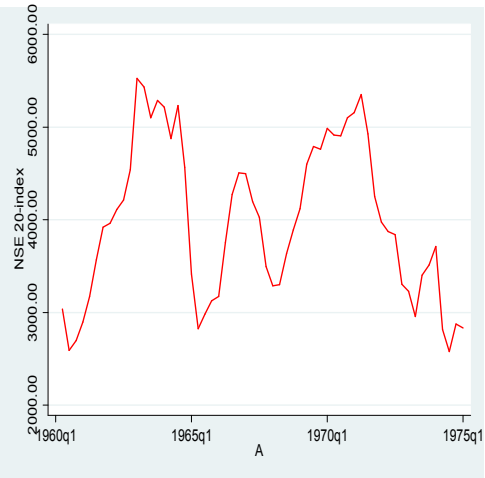
	Period	NSE 20-index KshS	Money Supply Kshs	Credit To Private Kshs	Foreign Direct Investment Kshs
1	Mar-04				
2	Jun-04				
3	Sep-04				
4	Dec-04				
5	Mar-05				
6	Jun-05				
7	Sep-05				

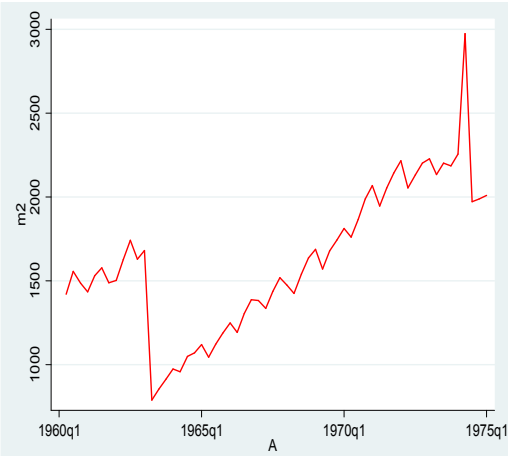
8	Dec-05				
9	Jan-06				
10	Mar-06				
11	Sep-06				
12	Dec-06				
13	Jan-07				
14	Jun-07				
15	Sep-07				
16	Dec-07				
17	Jan-08				
18	Jun-08				
19	Sep-08				
20	Dec-08				
21	Jan-09				
22	Jun-09				
23	Sep-09				
24	Dec-09				
25	Mar-10				
26	Jun-10				
27	Sep-10				
28	Dec-10				
29	Mar-11				
30	Jun-11				

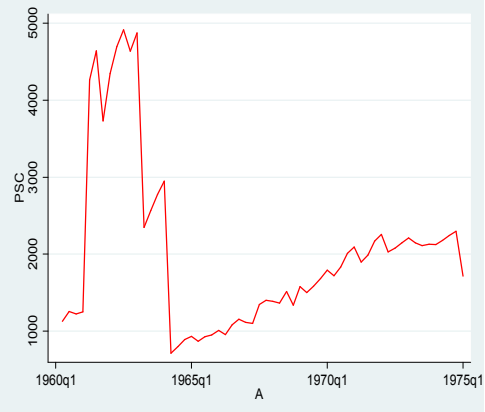
31	Sep-11				
32	Dec-11				
33	Mar-12				
34	Jun-12				
35	Sep-12				
36	Dec-12				
37	Mar-13				
38	Jun-13				
39	Sep-13				
40	Dec-13				
41	Mar-14				
42	Jun-14				
43	Sep-14				
44	Dec-14				
45	Mar-15				
46	Jun-15				
47	Sep-15				
48	Dec-15				
49	Mar-16				
50	Jun-16				
51	Sep-16				
52	Dec-16				
53	Mar-17				

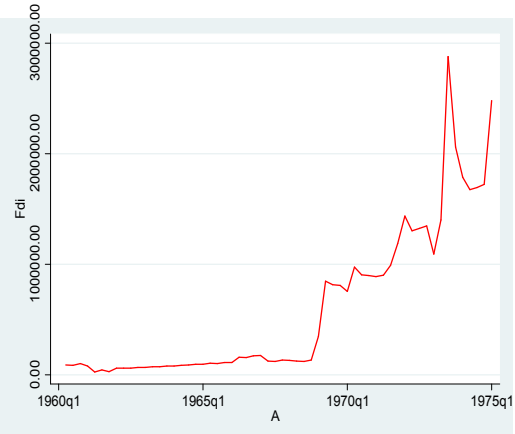
54	Jun-17				
55	Sep-17				
56	Dec-17				
57	Mar-18				
58	Jun-18				
59	Sep-18				
60	Dec-18				

Appendix III. Trend Graphs.





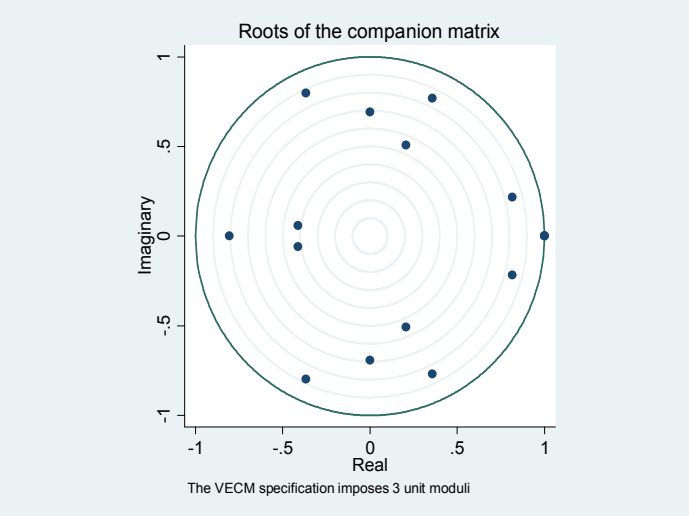




Appendix IV. Stationarity test

```
. dfuller NSE20index, lags(0)

Dickey-Fuller test for unit root                    Number of obs   =        59

                                 ---------- Interpolated Dickey-Fuller ----------
                    Test         1% Critical       5% Critical      10% Critical
                Statistic             Value             Value             Value
------------------------------------------------------------------------------
 Z(t)             -1.633            -3.567            -2.923            -2.596
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.4658

. dfuller m2, lags(0)

Dickey-Fuller test for unit root                    Number of obs   =        59

                                 ---------- Interpolated Dickey-Fuller ----------
                    Test         1% Critical       5% Critical      10% Critical
                Statistic             Value             Value             Value
------------------------------------------------------------------------------
 Z(t)             -1.830            -3.567            -2.923            -2.596
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.3656

. dfuller PSC, lags(0)

Dickey-Fuller test for unit root                    Number of obs   =        59

                                 ---------- Interpolated Dickey-Fuller ----------
                    Test         1% Critical       5% Critical      10% Critical
                Statistic             Value             Value             Value
------------------------------------------------------------------------------
 Z(t)             -2.276            -3.567            -2.923            -2.596
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.1798

. dfuller Fdi, lags(0)

Dickey-Fuller test for unit root                    Number of obs   =        59

                                 ---------- Interpolated Dickey-Fuller ----------
                    Test         1% Critical       5% Critical      10% Critical
                Statistic             Value             Value             Value
------------------------------------------------------------------------------
 Z(t)             -0.272            -3.567            -2.923            -2.596
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.9294
```

Appendix V. Goodness of fit



Appendix VI. Impulse response function.