# THE EFFECT OF FOREIGN DIRECT INVESTMENT ON STOCK MARKET DEVELOPMENT IN KENYA

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# DECLARATION

I declare that this research project is my original work and has never been presented for any award in any learning or non-learning institutions.

Sign: .....

Date: .....

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This research project has been submitted for examination with my approval as a university supervisor.

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# DEDICATION

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# **ABBREVIATIONS**

ANOVA:	Analysis of Variance
CMA:	Capital Market Authority
EMH:	Efficient Market Hypothesis
FDI:	Foreign Direct Investment
GDP:	Gross Domestic product
GNP:	Gross National Product
IMF:	International Monetary Fund
NSE:	Nairobi Securities Exchange
NSE20:	NSE 20 Share Index
OECD:	Organization of Economic Cooperation and Development
SPSS:	Statistical Package for Social Sciences
UNCTAD:	United Nations Conference on Trade and Development
USD:	United States Dollar
VECM:	Vector Error Correction Model

# ABSTRACT

The equity market around the world has been expanding and integrating leading to developing countries changing the makeup of the capital flows in their economy. Therefore, this paper tried to examine the effect of FDI on the development of stock market in Kenva for the period 1982 to 2016 using annual secondary data. The independent variable was FDI as measured by FDI net inflows as a percentage of GDP. The control variables were macroeconomic stability (inflation rate), real interest rate and GNP/GNI per capita growth as a proxy for economic growth. The dependent variable the study sought to explain was the stock market development, whose operationalization was market capitalization as a percentage of GDP. The factors were analyzed to determine a connection with stock market developments based on a descriptive research design and a multiple linear regression model. From the analysis, only 28.5% of the variations of stock market development were explained by the selected independent variables while 71.5% of the variations were from other factors not covered in this study. The study results also posited a statistically strong and positive relationship between the independent variables and the stock market development (R=0.534). Individually, GNP per capita was found to be statistically significant in influencing stock market developments as opposed to the other determinants (FDI, inflation and interest rate) which were found to be non-significant. Therefore, the government and the regulators should ensure more FDI inflows as well as regulate the inflation and interest rate levels prevailing in the country having in mind their influence in stock market development and generally the economy.

# **CHAPTER ONE: INTRODUCTION**

#### 1.1 Background of the Study

Foreign direct investment (FDI) has been growing drastically given it is a major international capital form of inflows as well as due to financial and political transformation in developing economies (Adam & Tweneboah, 2009). According to Njuguna (2016), the effort made by developing countries in attracting FDI is based on the potential positive effects on the home economy such as productivity increase, complement domestic private investment, transfer of technology, management and technical skills, production network internationally, training of employees, creating employment opportunities, and easy external markets access which then boosts the overall economic growth. Therefore, FDI is considered as a major driver to the growth of the economy because of its stability over domestic investment and other types of capital flows. Several studies for example Singh (1997), Alajekwu (2012), Ndung'u (2011), observed a positive connection between growth of economy and development of stock market. Therefore, a triangular causal relationship can be viewed between FDI and development of stock market whereby the growth of economy is first stimulated by FDI, which then exerts a positive influence on development of the stock market and lastly the implication results to FDI promoting the improvement of the stock market (Adam & Tweneboah, 2009).

This study will be guided by several theories including the modern portfolio theory, efficient market hypothesis and dependency theory of FDI. These theories have tried to explain the relationships between the two variables, whereby, both local and foreign investors aim at constructing an optimal portfolio of securities that gives them

maximum returns given a certain level of risk. Most investors prefer diversifying risk internationally as securities between countries are less correlated (Odo et al., 2016). In addition, foreign investors tend to have private information since they can meet with the management and discuss about the company hence they are able to make decision regarding the kind of shares to retain, add or remove from their portfolio (Akerlof, 1970). Therefore, this means that there will be FDI inflows in the host country in form of investment, which influences the development of stock market. However, the dependency theory of FDI tends to disagree as it explains that FDI affects the economy negatively and therefore the stock market development (Odo et al., 2016).

Studies to establish the determinants of stock market development such as macroeconomic factors, financial and political reforms have been carried out in developing economies including Kenya. The studies include Garcia and Liu (1999), Naceur et al (2007), Masila (2010), Chepkoiwo (2011) and Kamal (2013) where the results proved that factors that enhanced growth of the economy and the progress in the financial and political reforms resulted to development of financial markets especially stock market. However, considering the fact that FDI is a dominant form of capital inflows that possesses positive effects to the host economy, few studies have been done to explain its contribution if any to the development of stock market that ensure efficient allocation of savings and investment to viable projects. As a result, this study will concentrate on determining the factors that ensure stock market development is gained in Kenya with particular emphasis on FDI that has been rising steadily.

#### **1.1.1 Foreign Direct Investment**

Oseni and Enilolobo (2011) defined FDI as a venture that gives control to a foreign owner over the action of the firms where the investment has been made. Firms engage in FDI for global production and competition as well as to move production to profitable areas. Muema (2013) stated that FDI is a long-lasting venture that is outside the economic or physical boundaries of the investor. Odo et al. (2016) related FDI to ventures that grants the investor the opportunity to enjoy a perpetual interest in a company located in a country other than his own country and this investments takes the form of factory building, equipment acquisition, plants establishments etc. FDI has been observed to include all forms of capital contributions and the reinvestments of earnings by a company incorporated abroad. Generally, FDI tends to be a longterm investment carried out by a foreign investor who can be an entity or a group of entities with a common goal, with the aim of gaining an effective voice in the management of that firm which will finally achieve a lasting interest, control and management.

According to Kariguh (2014), foreign investment is one of the main sources of capital flows in most economies that are still developing as they tend to bridge the gap of capital, managerial skills, technology, formation of human capital as well as creating an environment for more business competition. However, according to Voorpijl (2011), there are consequences for increasing the FDI inflows whereby the multinationals can exploit the local capabilities more freely. Also, the promotion of private investment rather than public investments by many international donors leaves nothing to the host company when they decide to leave.

Generally, FDI are the net inflows of investments from one economy to another and therefore FDI is measured by the net inflow, which is the remainder of first time investment inflows after removing the divestiture and is measured as a percentage of GDP of that economy (Shahbaz, Lean & Kalim, 2013). FDI is advantageous to multinational enterprises as it is a means of entering the markets, accessibility to resources and reduced cost of production. It also benefits the invested country as it provides domestic investment capital which is much in need, creating job opportunity to locals, introduces new management skills and strategies, business practices, technology and economic concepts that ensures growth of local businesses, new industries and increased revenue which leads to economic development (Karthik & Kannan, 2011, Selma, 2013).

# **1.1.2 Stock Market Development**

Kamal (2013) defined a developed stock market as the market, relative to the economic size, that is sufficiently large and liquid and has market capitalization that is non-concentrated and shows adequate linkage to the performance of the real economic sector. Stock market development is also the strategic plans that the market undergoes to develop the already present market instead of looking for new markets to venture. Modification in the general makeup of capital inflows is being viewed especially in developing countries as a result of development in terms of integration and expansion of the world equity market (Karthik & Kannan, 2011). The stock market development is imperative as it boosts investment, savings and economic growth and therefore hard to be ignored in any economy (Shahbaz, Lean & Kalim, 2013). Generally, development of stock markets can also be defined as the process whereby the stock market changes and becomes more advance or improves to become

better than it was, in its ability to satisfy the needs of the economy as one of its main functions.

According to Fort, Yen-Tsang and Peixoto (2011), the World Bank have come up with benefits that development of stock markets has contributed to the economy with key among them being the investment of long term savings to productive activities. Another benefit is to investors who are provided with maximum returns as well as efficient and effective consumption of resources, which therefore drives the cycle of development and competitiveness. Stock markets that are developed also possess liquidity, volume and enhance regulations by regulatory bodies and this stimulates business transactions at a firm level. The activities of shareholders who own shares that are traded in developed stock markets determines the expectations and opinions of the main market players on the state of economic affairs both domestic and international. Lastly, development means efficiency that attracts, maximize, consolidate, and retain external capital in which most developing countries seek.

Garcia and Liu (1999) measured the development of stock market using market capitalization, as it is less arbitrary compared to other measures of the development of stock market. It indicates the stock market size and is similarly the total market worth of all stocks that are quoted as a percentage of GDP. Literature has extensively used this indicator as a stable measurement for the development of stock market since it measures the size of the stock market, which increases with increase in mobilization of capital and diversification of risk. It is also thought to contain the past but retained profits of companies and prospects of future growth therefore a higher ratio to GDP can indicate growth prospects as well as the development of stock market (Levin & Zervos, 1998b, Rajan & Zingales, 2003). Adelegan (2008) as sited by Kamal (2013)

explained that despite its advantages, one of its disadvantages is that there may be a higher ratio that is caused by few companies' values appreciating, yet with insignificant change in the volume of funds raised and therefore there will be no change in the breath of the stock market. This can be misinterpreted as development of stock market.

# 1.1.3 FDI and Stock Market Development

Adam and Tweneboah (2009) stated that in developing economies, following financial and political transformation, FDI has grown rapidly. Most countries have embarked on a number of practices to increase their share of FDI flows. Such activities include relaxing FDI restrictions, macro stability strengthening, privatization of enterprises owned by the state, domestic financial report, liberalization of capital account, and instituting tax incentives and subsidies (Oseni & Enilolobo, 2011). In addition, there is establishment and development of stock markets to direct funds towards viable projects for investments. Foreign investors are now among the main participants in the rising and developing stock markets by either buying already existing equity or disposing the same in capital markets though the resultant impact on the development of these emerging stock markets especially in the developing countries has received little attention. The foreign direct investment affect price of company's shares either positively or negatively as it increases the demand or the supply of the shares (Al-Halalmeh & Sayah, 2010).

Investors can engage in social activities by investing in speculative assets in the hope of making a profit. Therefore, investors can spend an ample part of their leisure time reading and discussing on investment or even gossiping about other's successes and failures in investments. It thus can be concluded that the social movements are likely to influence the investors' behavior on investment and therefore the speculative assets' prices (Shiller, 1991). Additionally, the movement of cross-border mergers and acquisitions (M&A) can be enhanced by capital market and they constitute an important part of FDI. Shahbaz, Lean and Kalim, (2013) reviewed a study by Chousa, Tamazian and Vadlamannati (2008) which concluded that a positive but strong connection between the development and quality of capital markets and the M&A flows in emerging economies. Empirical evidence has proved that greater efficiency of domestic capital market attracts foreign investors and therefore international M&A.

Theoretically, there has been a prove of a triangular causal connection between the FDI and the improvement of the stock market whereby FDI inflows is considered a wellspring of progress in terms of technology and decreasing unemployment in most countries that are still developing. This will then increase the production of goods and services that ultimately result to increased GDP. Therefore, increased GDP means the growth of economy, which influence the development of stock market positively and the rise of share prices (Adam & Tweneboah, 2009). The lasting effect of FDI inflows on both the increased investor's involvement in stock exchange and the development of the domestic capital market were earlier confirmed by Errunza (1983). It is also declared that the number of investors and trading volume is increased by the greater confidence in the domestic capital market, which is promoted by both institutional and regulatory reforms that are encouraged by FDI. Batten and Vo (2009) confirmed a linkage between FDI and stock market development whereby FDI possessed a stronger positive influence on the economic growth especially in countries that exhibited higher levels of development in stock market.

### 1.1.4 FDI and Stock Market Development in Kenya

Voorpijl (2011) considered Kenya as performing less than expected in attracting FDI despite its status internationally and the many positive aspects present in the country. This underperformance was mainly contributed by corruption, political unrest and licensing procedures, which result to the cost of doing business increasing significantly. Since 2010, Kenya was ranked among the largest recipient in Africa of FDI, with a noticeable improvement in FDI inflows. This can be attributed by the Chinese investments in the mining and hydrocarbon sectors. FDI inflows are also expected in Kenya whereby an investor from China has launched a project for railroad construction that will connect Kenya, Uganda, Rwanda, and South Sudan that will nearly cost USD 14 Billion. In 2015, Kenya benefited from a 50% rise of FDI projects compared to the previous year from USD 990million to USD 1.5billion (UNCTAD, 2015). In April 2017, the Kenya Investment Authority predicted that FDI influx could have reached as high as USD 2.5 billion in 2016.

The World Bank (2017) showed that Kenya was ranked position 92<sup>nd</sup> out of 189 countries in terms of FDI inflows. From 2016, this was a 16 gain of places and therefore an improvement. The reason behind this was the fact that Kenya simplified its procedures followed in creating business and ownership transfer and improvement of electricity and credit access. Kenya has also embarked on several activities in order to enhance a positive influence on FDI inflows in the coming years such as relaxing conditions for obtaining business licenses and public-private partnership development which is a strategy in the Vision 2030. In addition, Kenya has also opened most sectors to foreign investment such as the telecommunications sector, which has mostly attracted FDI due to the fiber optics that were introduced in 2009-2010. Other

sectors such as the tourism and banking with countries for example the United Kingdom, China, Belgium, Netherlands and South Africa as the main investors has attracted FDI in Kenya.

In Kenya, Securities are currently traded in the Nairobi Securities Exchange, which in 1954 was established as a stockbrokers' voluntary association and registered under the societies Act. Later in 1991, it was formed into a legal company limited by guarantee and without a share capital under the companies Act of Kenya. Since then, there has been a subsequent increase in the number of companies listed at NSE, increase in the number of stock brokers, establishment of custodial institutions and credit rating agencies and the introduction of investment banks all due to the developments of the market. The securities therefore traded in this market are the bonds, equities and the preference shares. In 1964, a year after Africans were first allowed to transact in the market, there was an introduction of the NSE 20 share index. Equities traded at Kenya's Nairobi Securities Exchange are measured through NSE 20-Share Index (NSE 20) which has been a long-standing benchmark index. This index is used to indicate a geometric mean usually for the NSE's 20 top stocks in terms of the share price. In 2006, NSE All Share Index (NASI) was introduced whose main aim was to reflect total market value of all the stocks traded in the market on a daily basis whereas NSE 20 only captured the price changes of the 20 best performing stocks (NSE, 2017).

### **1.2 Research Problem**

The causal nexus between FDI and stock market development has received considerable attention from academicians where studies have used data from both developed and developing countries. There has been an increased flow of FDI to developing countries in the past century though their effects differ extensively between countries (Voorpijl, 2011). Lots of attention has been given by foreign investors who inject foreign currencies to the emerging markets with rapid development of stock market. This is because in developing countries, an internationally integrated stock market enhances foreign investments, which result to higher liquidity and stock order flows. This is evidence from the higher proportion of market capitalization from foreign investors (Kariguh, 2014).

Kenya has experienced an increase in FDI inflows over the years with an average growth between 2007 and 2015 of 40% (Ernest & Young,2015). This growth rate earned Kenya the status of FDI hotspot therefore joining other African countries such as Uganda, Zambia, Ghana, Mozambique, Tanzania, Nigeria and Rwanda. In 2015, FDI inflows stood at \$1076.9 million, up from \$670 million a year earlier which is a sixty per cent (60%) increase (UNCTAD, 2015). Because of these capital inflows, there have been developments in the financial market especially NSE. NSE have been developing since it became a legal company whereby, there has been a subsequent addition of companies listed, increase in the number of stock brokers, establishment of custodial institutions and credit rating agencies and the introduction of investment banks (NSE, 2017). This can be attributed from the changes in the capital inflow make-up due to the expansion and integration of the world equity market.

Literature has extensively discussed how foreign direct investment has imparted on development of stock market. Adam and Tweneboah (2009), Karthik and Kannan (2011), Shahbaz, Lean and Kalim (2013) tried to examine the effect of FDI on the development of stock market in several developing countries such as Ghana, India and Pakistan as well as determining whether a complementary or substitution role is played by FDI in stock market development. Their findings was the presence of a long-term relationship between FDI and development of stock market which was concluded that the two variables exhibited a triangular causal relationship whereby FDI stimulated economic growth which then enhanced stock market development.

In Kenya, Njeru (2013) and Wanjiku (2016) researched on the connection between FDI and economic growth and concluded that FDIs have an impact on the level of economic growth. Ndung'u (2011) studied the link between the growth of economy and the development of the stock market in Kenya and the findings was a positive connection between the two variables. Masila (2010) and Chepkoiwo (2011) examined the factors that affect the development of NSE. Their result was that factors such as stock market liquidity, domestic savings and bank development affected the development of NSE while inflation and private capital inflows had no relationship. It can therefore be concluded that majority of the previous studies did not however examine the link between FDI and stock market development in Kenya although very few researches have been done in developing markets to show the impact of foreign investment on stock market development. This study seeks to bridge the gap by answering the research question: What is the effect of the FDI on the stock market development in Kenya?

# **1.3 Research Objective**

To determine the effect of the foreign direct investment on the stock market development in Kenya.

### 1.4 Value of the Study

By appreciating the meditating role of FDI on stock market development, this research will be beneficial to academicians, researchers, and scholars by increasing their pool of knowledge in that area as well as use it as a basis for future studies.

The study will give policy makers and regulators an insight of the factors that influence the development of stock market in Kenya. By knowing the trend of FDI and stock market development as well as the exert relation that exist among the variables, the regulators such as the government, CMA and NSE can be able to come up with regulatory framework that enhance attractiveness of FDI and stock market development through policies, rules and regulations that create a favorable environment.

This study will aid foreign investors in investment decision since they will know the future prospect of the market hence better management of their investment portfolios. It will help some institutions such as IMF and World Bank who can use the information in this study to assess the development of Kenya as a developing country based on stock market development.

# **CHAPTER TWO: LITERATURE REVIEW**

# **2.1 Introduction**

This chapter represents various streams of literature review that have been done by various researchers on the FDI and stock market development both locally and internationally. It entails a review of theories related to FDI and stock market, a detailed discussion on determinants of stock market development, a review of empirical studies that have been done on FDI and stock market development, conceptual framework, and finally a conclusion from the literature review.

## 2.2 Theoretical Review

This section reviews whether existing theories suggest the existence of an association between FDI and stock market development. The theoretical reviews covered are Modern portfolio theory, dependency theory of FDI and efficient market hypothesis.

#### 2.2.1 Modern Portfolio Theory

Markowitz (1952) pioneered the theory of modern portfolio which states that riskaversion of investors can lead to development of portfolios that can reduce the returns that are expected based on a given level of risks in the market. Investors are postulated not only to consider returns but also the risk in selecting the portfolio to invest. The theory is based on the fact that fluctuations in rates of return on capital within and even more so between countries are not perfectly correlated. This implies that when investors diversify their ventures internationally rather than domestically they may achieve a bit higher amount of return on their investment at minimized risk. This is because the portfolio risk can be high if the securities making up the portfolio are more correlated and vice versa (Odo et al., 2016).

In recent years, although the international markets may have increased their correlation among each other, the securities traded among countries are still less correlated than within a country. Rational investors are more willing to assume higher levels of risk if they are adequately compensated with a higher expected return. Markowitz also described the efficient frontier, whereby it is the optimal portfolio that an investor desires since it produces the best expected returns given the lowest or defined amount of risk. Therefore, there are potential gains from holding optimal international portfolios (Kimani, 2012).

From this theory, it is evident that investors prefer portfolio risk diversification. Therefore, they will take advantage of international diversification, which takes into consideration the factors that affects returns such as the institutional, political, psychological and economic factors, which greatly vary from one county to another, and that returns of securities across countries are much less correlated than within a country. This means that FDI positively affects stock market development because foreign investors will venture into another country's stock market whose securities promise higher returns with less risk. These capital inflows will result to growth and development of financial markets especially the stock market as the policy makers employ strategies to ensure that funds are efficiently allocated to viable projects hence its development. Also, developing stock market in terms of liquidity and size attracts FDI, hence a bidirectional relationship between the two variable do exist.

#### 2.2.2 Efficient Market Hypothesis

Fama (1965), the developer of efficient market hypothesis argued that in an efficient market, stocks should always trade at their fundamental value. The fundamental value in stock is the value that is obtained through the fundamental analysis only, without considering the condition of the market. It therefore represent the price of stocks that fully contains all the information available including private and hidden insider information and so no investor can gain higher return by trading them since they cannot dispose overpriced or acquire underpriced stocks and that the prices only respond in unbiased way and very rapidly to the presence of new information. Consequently, proper selection of stock or market timing cannot be used to outperform the overall market and so no investor can gain higher returns by chance or by buying riskier investments that promise higher returns (Ombongi, 2014).

This hypothesis was at the beginning developed to explain information problems in security markets especially the stock market. It has however received critics that have resulted to emergence of the asymmetric information theory as first introduced by Akerlof (1970). He argued that buyers measure the worth of a good using some market statistic thereby they only have the average of the whole market while the seller has more knowledge of a specific good. Therefore, this information asymmetry enables the seller to sell the goods of even below the average market quality (Akerlof, 1970).

The implication is that foreign investors are thought to have some important information on shares of certain companies based on another country other than the one they are located, that motivates them to venture in the capital market of that country. Investment in capital market is one way of foreign investors of gaining entry into another country. If these investors have extra information about the future performance of a certain company's share, then they will in no doubt be more than willing to invest in those shares and therefore there will be foreign investments in the host company. In addition, investors can be able to predict the kind of stocks to remove from their portfolio and the stocks to leave in. Therefore, this knowledge is advantageous to both local and foreign investors in their decision of constructing an efficient and diversified portfolio. Hence, this theory explains of a positive relationship between FDI and stock market development.

#### 2.2.3 Dependency Theory of FDI

Prebisch (1950) guided the development of this theory whereby it explained that FDI does not have a positive contribution to the economy of the host country but rather have a negative effect on such economy. This meant that there exist a dependency relationship between the developed economy and developing country (Zafar, Ahmed & Khan, 2016). The reason behind this was that the developing countries export raw goods to the developed countries who then manufacture the good into finished goods and then sell them back to the developing country. The process of value addition increases the cost unlike for raw goods therefore the developing country would never earn enough from their export earnings to cater for their imports (Ferraro, 2008). In addition, FDI is a form of entry of developed economies into developing countries in which it brings in complicated and superior equipment therefore outperforming local industries by destroying domestic micro businesses through use of higher technology and greater advertising skills. FDI is thought to contribute significantly to the balance of payment problems of most advancing countries as the profit earned by the multinationals are usually returned to the investing economy. These activities of the

foreign investors usually create imbalance in the developing country therefore affecting the chance for economic growth (Odo et al., 2016).

The implication of this theory to the association between FDI and stock market development is that a negative link between the two exists. This is because the higher levels of technologies introduced into the developing country bring about labor savings which affect the demand for domestic labor and then prolongs the level of poverty thereby reducing savings making it difficult to develop stock market in terms of liquidity and size.

#### **2.3 Determinants of Stock Market Development**

A framework for the main stock market development determinants was proposed by Kamal (2013) that there are four categories of factors that determine the stock market development that includes the supply factors, demand factors, institutional factors and economic policies. Also, Si-Yu and Bernard (2017) further classified them into two categories which include macroeconomic factors and institutional factors.

### 2.3.1 Supply Factors

Supply factors are factors that affect the decision of the company to supply or issue shares. Firms issue shares to raise capital and therefore they must factor in the cost of financing which determines whether the firm is going public or not. Capital structure theory especially the pecking order theory explains that a firm has three alternatives of financing. Firm's first alternative is to use internal financing which is considered less expensive with the second being debt and thirdly equity that is more expensive compared to debt. This theory proposes that the company's financial needs make it to get to the external market when the internal funds are insufficient to support viable investment opportunities (Myers & Majluf, 1984).

Though the cost of financing might be a significant determinant of the supply of shares, there are other macroeconomic factors such as the economic size, economic development stage, economic structure and economic growth prospect that also affect the supply of shares and thereby the stock market development. Development of stock market expects that the economy is large enough to support the stock market while more developed economy is anticipated to have a positive impact on stock market and hence its development (Kamal, 2013).

# **2.3.2 Demand Factors**

Kamal (2013) explained that demand factors are factors that affect the decision of the investor with regard to the investment in the stock market. Investors are concerned with risk-return combinations of their invested funds. Investor's preferences differ, as some prefer high risk-high return while others prefer low risk-low return combination for funds invested. This is because equities are the most risky investments with higher returns, the ability to ensure that their funds are put into better use that maximizes their returns, as well as the ability to liquidate their shares anytime. This simply means that investors are willing to invest in shares that promise higher returns in stock markets that are liquid and informative.

Other macroeconomic factors other than risk-return combination of invested fund have proved to significantly affect the demand of shares and hence the stock market development. For example, the growth of the economy and the level of per capita GDP are essential determinants of stock market development in that an increase in per capita income as well as the growth of the economy improves individual's ability to save and invest probably in shares after fully satisfying their basic needs. Other factors are the investors' base, institutional investors and portfolio capital flows from foreign participants in stock markets (Kamal, 2013).

# **2.3.3 Institutional Factors**

According to Kamal (2013), this factors acts as the first supporting block while economic factors are the second one of the stock market development. Institutional factors bring about high quality and well-established institutions, which enhances investors' confidence concerning property rights and transparency of information that are main motivation for investment in stock market as well as conducive economic policies. They also allow reduction of transaction costs and improved market liquidity that makes equity more attractive source of financing for firms.

As cited by Kamal (2013), development of stock market can be positively enhanced by good institutional factors that allow exchange, promoting trust as well as market fundamentals that motivate economic growth. They also enhance protection of property rights, allow more transparency, and reduce the rate of corruption. The institutional factors can be categorized into regulatory and legal framework, market infrastructure as well as other factors such as banking sector development, political stability etc.

# **2.3.4 Economic Factors**

These factors are very crucial to the development of stock market as they enhance the investors' confidence in the market and create a conducive environment for investment decisions. A change in some of these factors for example the monetary,

fiscal and exchange rate policies can affect the corporate profitability, which is a main motive for investment. Some of the economic factors that enhance development of stock market include monetary policies, fiscal and taxation policies, and foreign participation (Kamal, 2013).

Monetary policies should be logically managed to allow greater confidence in economic stability since for example both local and foreign investors are more willing to invest in stock markets whose economy have low or predictable inflation rate. Taxation policies are also considered by investors as they are concerned with the after tax real return of their investments and hence their participation in the stock market. Institutional investors policies can also determine the stock market development when institutional investors' ability to participate in the stock market is enhanced (Sudweeks, 1989).

### 2.4 Empirical Review

Adam and Tweneboah (2009) used multivariate co-integration and innovation accounting methods in their research to examine the impact of FDI on development of stock market in Ghana. Quarterly data was used from first quarter of 1991 to fourth quarter of 2006 where the co-integration analysis showed a long-run connection between the two parameters. There was also prove of a significant positive impact on the stock market development. Also using impulse responses and variance decomposition from vector error correction model (VECM), the Ghana's development of stock market was influenced significantly by the increasing FDI. Kenya, just like Ghana has been experiencing increased amount of FDI inflows hence it is of great importance to determine the impact of FDI on development of financial market especially stock market, which has received little or no attention in Kenya. Karthik and Kannan (2011) carried out a study in India in order to identify the macroeconomic variables that affect stock market development with main emphasis on FDI. They collected data for thirty-five years. A log linear model of regression was formulated and the macroeconomic variables used in the model included the FDI, inflation rate, domestic savings, GNP per capita and the market capitalization. From their analysis, they found out that market capitalization, a measure of stock market development had a positive but significantly strong connection with FDI, which shows the complementary role that FDI plays in the stock market of India. One of the shortcomings of this study is that it only considered the macroeconomic factors therefore ignoring the institutional factors such as political stability, banking sector development etc.

A research by Ali et al. (2012) was carried out on Pakistan, a lower middle-income developing country to analyze if FDI and the development of stock market are related and the role played by FDI in the market based on the fact that every country has its own local dynamics. Their study used an annual time series data from 1988 to 2009 and the model applied was the ordinary least squire (OLS) where they included other variables such as inflation, domestic savings, and the rate of exchange. The result of their analysis was that FDI in Pakistan had a positive significant effect on the stock market development. This study was based on macroeconomic variables that affect stock market development. Being a developing country, other factors such as institutional factors could have been considered in the model in order to determine the variable(s) that require much attention to the development of the stock market.

Shahbaz, Lean and Kalim (2013) did a study to investigate the macroeconomic variables with key concern on FDI which impact the development of stock market in Pakistan. Their concern was the substitution or complementary role of FDI to the

stock market development. They employed annual data for a period ranging from 1971 to 2006. In their analysis, they used ARDL bounds testing approach to cointegration and ECM and found out that FDI plays a complementary role to the development of stock market in Pakistan in that there was a significant long-run positive relation between FDI and stock market development. From the studies that have been done in Pakistan with regard to factors that affect stock market development, it is evidenced that most studies focused on macroeconomic factors but did not consider institutional factors like regulatory and legal framework, political stability etc.

Owiredu, Oppong and Asomaning (2016) tried to interrogate the macroeconomic determinants of stock market development in Ghana by employing annual secondary data for a period from 1992 to 2012. Their model included real income as measured by GDP per capita income, domestic savings, liquidity of stock market, growth of financial intermediary, inflation, and private cash flows as independent variables and market capitalization as the dependent variable. Linear regression model was used to analyze the data to determine their relationships. The results of their analysis were that stock market liquidity was statistically significant to the development of stock market unlike domestic savings, inflation, private capital flows and real income which resulted to be non-significant to the stock market development. One of the shortcomings of this study is that the researcher did not use the most current data whereby they could have included up to 2015. They also used annual data, which could not have given a clear view of relationships as compared to if quarterly data was used.

Masila (2010) examined the determinant of NSE development by employing regression analysis on secondary data for a period from 2005 to 2009. The results

were that several macroeconomic factors determined the development of NSE such as stock market liquidity, income per capita, domestic savings and development of bank while other factors such as inflation and private capital flows that measures macroeconomic stability had no relationship. She also had institutional factors in her model such as law and order, democratic accountability, bureaucratic quality and corruption index, which resulted to being important determinants of stock market development. However, this study used a short period whereas being that time series data was used, it could have been better to use a longer period. The study did not also establish whether macroeconomic instability and foreign capital inflows affected stock market development.

Chepkoiwo (2011) in his study covered a period from 2005 to 2010 do examine the factors that affect the development of the emerging capital markets especially NSE. By employing a case study design, he used secondary date where he analyzed it using descriptive and regression approach. In the model included both external and market factors which tends to determine stock market development. The conclusion was that while elements such as liquidity of stock market, institutional quality, domestic savings, income per capita and development of bank showed a relationship, other variables including inflation and private capital inflows did not however show a clear picture of the relationship. The regression analysis determined that 85% of stock market liquidity, domestic savings, macroeconomic stability, stock market liquidity, bank development and private capital flows. However, the study was faced with limitations such as use of a short period, which could not have been sufficient for objective conclusion. The study was also based on one type of analysis whereas

several analysis could be employed better interpretation of the linkage between variables.

Ndung'u (2011) sort to explore the extent of the connection of the development of stock market to the growth of Kenya's economy by analyzing data for a period of ten years from the second quarter of 2000 to the first quarter of 2010. In the study, a regression model was used complemented by a granger causality test where two stock market development measurers, which are size and liquidity of the market, were regressed against economic growth rate. The analysis evidence a positive association between growth of economy and development of stock market in Kenya. The nature of the relationship was from stock market development to economic growth as indicated by the granger causality test. The study focused on the determinants of economic growth in Kenya by concentrating on stock market development as one of the factors. It is therefore important to establish the variables that cause stock market development such as foreign capital inflows. One of the shortcoming of this study was that the control variables used did not picture clearly the relationship between economic growth and stock market development.

Njeru (2013) used data from 1982 to 2012 to investigate the effect of FDI on the economy of Kenya. He used SPSS and carried out various analysis such as inferential analysis, frequencies, trend analysis and descriptive analysis involving ANOVA and Correlation analysis to examine the presence of a link between the variables. The result of the analysis was a significant and direct positive connection between FDI and GDP as a measure of the economy. It was concluded that FDI stimulates economic growth and as Kenya puts in place policies to entice FDI, it must manage it to avoid the negative effects of it to the local businesses. FDI inflows comes in form

of investments especially in Kenya hence there is need to determine its effect in the financial market especially the stock market.

Wanjiku (2016) investigated the effect of FDI on the growth of economy in Kenya by using time series data for a period from 1980 to 2015. Through the ordinary Least Square (OLS) method, the effect of FDI and other variables on economic growth was determined whereby 73.84% of the Kenya's economic growth resulted from FDI, inflation, the level of infrastructure and human capacity development, Gross fixed capital formation, labor stock, financial development, openness of the economy and interactions between FDI and complementary conditions. However, for FDI to achieve a desired impact on the growth of the economy, it must interact with infrastructure development and openness of the economy. This study focused on how the economic growth is influenced by FDI generally, but it is also important to determine the influence of the inflows to the financial markets especially the stock market, which have shown a positive impact and plays an integral role to the economic growth and development of most countries especially Kenya.

### **2.5 Conceptual Framework**

Conceptual framework explains that the dependent variable is the development of stock market as operationalized by market capitalization as a percentage of GDP while the independent variable will be FDI measured by net inflows as a percentage of GDP, which is a macroeconomic factor. Other factors that determine stock market development were categorized by Kamal (2013) as supply of shares, demand of shares, institutional factors, and economic factors. These factors can further be categorized into macroeconomic factors and institutional factors as most of the factors affected the economy (Si-Yu and Bernard 2017).




Source: Researcher (2017)

#### 2.6 Summary of the Literature Review

Based on the literature review carried out in this chapter, a strong theoretical and empirical foundation explains how FDI influences the development of stock market. Theories explain that both local and foreign investors prefer diversifying risk internationally as securities between countries are less correlated. Therefore, this means that there will be FDI inflows in the host country in form of investment, which influences the development of stock market. The empirical review support the idea that a triangular causal relationship exist between FDI and development of stock market whereby the economic growth is first stimulated by FDI which then exerts a positive effect on development of the stock market and lastly the implication results to FDI encouraging the development of the stock market. This study is based on determining the cause of FDI on stock market development in Kenya based on the fact that Kenya has been receiving increased amount of FDI inform of investment hence need for establishment and improvement of stock market to ensure resources are channeled to viable projects.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provides procedures followed in order to develop answers to the research question and complete the different components of the research processes as well as provide the tasks needed. It describes the research design, the collection of data, analysis of data and research models applied.

#### **3.2 Research Design**

Research design is defined as a blue print of procedures in which the researcher utilizes while testing correlation between variables both dependent and independent (Khan, 2008). The descriptive research design was employed in which the secondary data was analyzed to ascertain the effect of FDI on stock market development. This design involves description of all the elements of the population as well as help to build on what is already known in the subject area since it help to provide answers to the questions of what, when, where and how of a phenomena.

#### 3.3 Data Collection

The nature of data used in this study was the secondary data. The data was collected for a period of 35 most recent years from 1982 to 2016. The market capitalization as a percentage of GDP of Kenya was available from World Bank database and is commonly used for stock market development. This measure was used by various researchers such as Adam and Tweneboah (2009), Karthik and Kannan (2011) and Shahbaz, Lean and Kalim (2013) in their research of the effect of FDI on the development of stock market in countries that are developing. The FDI, GNP/GNI per capita, inflation and interest rate data was collected from either of the following sources; The World Bank database, Kenya National Bureau of Statistics (KNBS), the UNCTAD and the Central Bank of Kenya (CBK) database. This data was suitable because it was available and has been comprehensively collected for a long period. Data obtained from these sources is advantageous as it is considered authentic and therefore, it can be relied upon for making conclusions.

#### **3.4 Data Analysis**

The collected data was quantitative hence it was analyzed using both descriptive and inferential statistics. Statistical Package for Social Sciences (SPSS) version 21 a more user-friendly was used for analysis. The data was then examined using descriptive, correlation and regression analysis. In descriptive statistics, the study employed mean and standard deviation. In inferential statistics, the study used multi-linear regression analysis to determine the relations between the dependent variable (stock market development) and independent variables: FDI, interest rates, inflation rate and GNP per capita.

#### **3.4.1 Diagnostic Tests**

Diagnostic tests are carried out to test for the assumption of the multiple linear regression. These tests are important as they are used to determine the quality of the data as well as help in formulating the model. The assumptions of multiple linear regression that were tested in this study include linearity, normality autocorrelation, homoscedasticity and multicollinearity. What the assumptions mean and how they are obtained are discussed as follows.

Linearity show that two elements X and Y are mathematically related by the equation Y=bX+c, where c is a constant number. The linearity test is obtained through the scatterplot testing or F-statistic in ANOVA. Stationarity test is a process where the statistical properties such as mean, variance and autocorrelation structure do not change with time. Stationarity can be shown from the run sequence plot. Normality is a test for the assumption that the residual of the response variable are normally distributed around the mean. This can be determined by Shapiro-walk test or Kolmogorov-Smirnov test. Autocorrelation is the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals. It is tested using Durbin-Watson statistic.

Homoscedasticity of variance is required for multiple linear regression and therefore is when the variance of the error term is constant over the population while the variance of y is constant and is not dependent on the x's. Otherwise, non-existence of a constant variance of the variance of error term posits heteroscedasticity. Homoscedasticity is graphically evaluated using residual plots where the regression residuals are plotted against the values of the independent variables. If an even pattern about the horizontal axis appears then heteroscedasticity is unlikely. It can also be shown by white test.

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This can be tested by the determinant of the correlation matrices, which varies from zero to one. Orthogonal independent variable is an indication that the determinant is one while it is zero for a complete linear dependence between them and as it moves to zero then the multicollinearity becomes more intense. Variance Inflation Factors (VIF) and tolerance levels will also be carried out to show the degree of multicollinearity.

#### 3.4.2 Conceptual Model

The study applied a conceptual model of the form:

 $Y = f(X_1, X_2, X_3, X_4)$ 

Where:

Y= Stock Market Development

 $X_1$  = Foreign Direct Investment

X<sub>2</sub>= Inflation Rate

X<sub>3</sub>= Real Interest Rate

X<sub>4</sub>= GNP/GNI per Capita

The important of a conceptual model is to provide a basis for estimating the relationship between variables, specifically the relationship between FDI and stock market development.

### **3.4.3 Analytical Model**

The multi-linear regression model applied to determine the objective of this study was:

 $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$ 

Whereby, Y represents development of stock market as marked by market capitalization as a percentage of GDP as in Adam & Tweneboah (2009) and Garcia &

Liu (1999). X<sub>1</sub> represent foreign direct investment marked by net inflows as a percentage of GDP (Karthik & Kannan, 2011). X<sub>2</sub> represent inflation rate (Zafar, Ahmed & Khan, 2016). X<sub>3</sub> represent real interest rate. X<sub>4</sub> represent economic growth as measured by GNP per capita (Karthik & Kannan, 2011).  $\beta_0$  is a constant term of the model, while  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  are Co-efficient of the independent variables and then  $\varepsilon$  is the error term.

#### 3.4.4 Test of Significance

The F-test was conducted to test the significance of the overall model whereby if F calculated is higher than the table value then the conclusion is that there is statistical evidence of significance correlation at 5% significance level. If that is not the case then the model will be regarded as non- significant. T-test was used to test for the significance of the association between development of stock market and each of the control elements. Correlation coefficient (r) was used to ascertain the strength and direction of the connection between dependent variable and each of the independent variable. Coefficient of determination (R. square) was used to figure out the proportion of variance in the dependent element that can be explained by control variable.

# CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

#### **4.1 Introduction**

This chapter reveals the analysis of data collected. The study used secondary data covering the period from 1982 to 2016 for analysis. The data was obtained from Nairobi Securities Exchange, KNBS and Central Bank and was used to answer the researchers' queries. The research sought to under see the effect of FDI on stock market development in Kenya by employing the descriptive, correlation and regression analysis.

#### 4.2 The Hypothesized Model

The dependent variable is market capitalization as a percentage of GDP as a proxy for stock market development and independent variables are FDI, real interest rates, inflation rate and GNP per capita growth.

Given the general form of the multiple linear regression model under analytical model, the researcher hypothesized the study model as:

Mkt cap=  $\beta_0 + \beta_1$ FDI +  $\beta_2$ INF +  $\beta_3$ RIR +  $\beta_4$ GNP +  $\epsilon$ 

Where, Mkt cap = Market capitalization as a percentage of GDP

FDI=foreign direct investment net inflows as a percentage of GDP

INF=Inflation rate

RIR=Real interest rate

GNP =Gross national product per capita growth

#### **4.3 Diagnostic Tests**

This section discusses the tests of the multiple linear regression assumptions and the treatment of the data in case of violation of the assumptions.

#### **4.3.1** Test of Normality for the Response Variable

This tests the assumption that the residuals of the response variable are normally distributed around the mean. There are several test for normality such as Kolmogorov-Smirnov which is appropriate for huge data (N>100) and Shapiro-wilk test which is useful in this study since it is the most appropriate for small data (N=35).

The hypothesis tested is:

H<sub>0</sub>: The sample data of the response variable (Mkt Cap % of GDP) is normally distributed

H<sub>1</sub>: The sample data of the response variable is not normally distributed

 $\alpha = 0.05$ 

The Shapiro-Wilk test result for normality of the response variable data is presented in table 4.1

**Table 4.1: Test of Normality** 

	Kolmogo	olmogorov-Smirnov <sup>a</sup> tatistic Df Sig.		Shapiro-Wilk			
	Statistic	Df	Sig.	Statistic	Df	Sig.	
Mkt Cap % of GDP	.153	35	.038	.885	35	.002	

Source: SPSS output

Table 4.1 above clearly shows that the value of p is less than 0.05 (p-value<0.05). Hence, failure to accept null hypothesis (that the sample data of Mkt Cap percentage of GDP is normally distributed) and accept the H<sub>1</sub> that the sample data of the response variable (Mkt Cap percentage of GDP) is not normally distributed.

To carry on with the analysis, the non-normality of the data had to be corrected. This was done through transformation of the sample data of Mkt Cap percentage of GDP using natural logarithm transformation. Table 4.2 below shows the normality output of the natural log transformation.

	Kolmogor	ov-Smirr	lov <sup>a</sup>	Shapiro-Wi	lk	
	Statistic	Df	Sig.	Statistic	Df	Sig.
Ln Mkt Cap%	.153	35	.536	.895	35	.723

Table 4.2: Tests of Normality after Natural Log Transformation

Source: SPSS output

The results in table 4.2 above shows a p-value greater than 0.05. Therefore, failure to reject  $H_0$  and concluded that the transformed data of the response variable is normal.

The plot of the residuals of the transformed data is depicted in figure 4.1.





#### Source: SPSS output

The bell-shape of the histogram in figure 4.1 clearly shows that the transformed sample data is normally distributed around their mean of zero.

## 4.3.2 Test for Homoscedasticity

Another important multiple linear regression model assumption is that the variance of the error term is constant. Heteroscedasticity occurs when the variance of the errors are not constant while homoscedasticity occurs when the variance of the errors are constant. To test for homoscedasticity, the researcher used White test based on the following hypothesis.

- H<sub>0</sub>: There is no heteroscedasticity
- H<sub>1</sub>: There is heteroscedasticity

 $\alpha = 0.05$ 

**Table 4.3: Model Summary** 

						Ch	ange Sta	ntistics	
				Std. Error	R	F			
		R	Adjusted	of the	Square	Chang			Sig. F
Model	R	Square	R Square	Estimate	Change	e	df1	df2	Change
1	.534 <sup>a</sup>	.285	.190	.32312	.285	2.997	4	30	.034

Source: SPSS output

Table 4.3 above represents the model summary in which R of 0.534 is used in calculating Chi-square while carrying out the white test. Table 4.4 below summarizes the calculations of the white test statistics.

<b>Table 4.4:</b>	<b>Chi-square</b>	Calculated	and Chi	i-square	Tabulated
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Test	Chi-square	Chi-square tabulated, $\alpha =$
	calculated	0.05
	$\chi 2 = nR2$	$\chi 2\alpha(p)$ , where $p = k+1$
White test	9.975	17.03

Source: SPSS output

The results from table 4.4 shows that the value of calculated chi-square (9.975) is less than the value of tabulated chi-square (17.03) at  $\alpha$ =0.05 significant level hence accept the null hypothesis of no heteroscedasticity and therefore the conclusion is that the data is homoscedastic.

#### **4.3.3 Test for Lack of Multicollonearity**

Multicollinearity is not about presence or absence but a matter of degree whereby, higher degree of multicollinearity means that there is higher likelihood of the disturbing consequences of multicollinearity. This study used VIF and tolerance levels to assess the degree of multicollinearity. A torelance level close to 1 shows little multicollinearity while a value close to zero shows a threat of multicollinearity. VIF, the reciprocal of tolerance level shows how much the variance of the coefficient estimates is being inflated by multicolinearity. The table below shows the tolerance levels and VIF.

		Unsta	ndardized	Standardized			Colline	arity
			fficients	Coefficients			Statis	tics
							Toleranc	
Model		В	Std. Error	Beta	Т	Sig.	e	VIF
1 (	Constant)	.951	.165		5.770	.000		
F %	FDI net inflows % of GDP	.107	.073	.235	1.471	.152	.933	1.072
Iı	nflation rate	.005	.009	.117	.564	.577	.555	1.801
R	Real interest ate	.004	.009	.081	.493	.626	.884	1.131
g	GNP per capita growth	.071	.029	.502	2.474	.019	.579	1.727

**Table 4.5: Collinearity Statistics** 

Source: SPSS output

The results from table 4.5 showed high tolerance levels since the value are closed to one hence little multicollinearity. Additionally, at least one independent variable, GNP per capita growth is significant in explaining the model at 0.05 significant level since p-value 0.019 is less than 0.05.

#### 4.3.4 Test for Autocorrelation

This test is used to measure the similarity between a certain time series and a lagged value of the same time series over successive time intervals. The researcher used Durbin-Watson statistic to test for this assumption of multilinear regression as shown in the table below.

Model	R	R Square	Adjusted R	Std. Error of the	Durbin-Watson
			Square	Estimate	
1	.534 <sup>a</sup>	.285	.190	.32312	.468

**Table 4.6: Durbin Watson Test** 

**Source: SPSS Output** 

A durbin-watson statistic of more than 1.5 indicated that the variable residuals are not serially correlated. From the table 4.6 above, durbin-watson statistic was 0.468.

#### 4.3.5 Test for Linearity

In linear regression analysis, the assumption is existence of a linear relation between the independent and the dependent element. This implies that in case of violation of this assumption, then the data is not fit for the linear regression model. We thus assessed linearity by testing the model if it's a good fit by conducting ANOVA test.

The test hypothesis is:

- H<sub>0</sub>: The model is not a good fit
- H<sub>1</sub>: The model is a good fit

 $\alpha = 0.05$ 

The regression output of ANOVA is shown in table 4.7.

## Table 4.7: ANOVA

		Sum of				
Mode	el	Squares	Df	Mean Square	F	Sig.
1	Regression	1.252	4	.313	2.997	.034 <sup>b</sup>
	Residual	3.132	30	.104		
	Total	4.384	34			

a. Dependent Variable: Ln Mkt Cap % of GDP

b. Predictors: (Constant), GNP per capita growth, Real interest rate, FDI net inflows % of GDP, Inflation rate

#### Source: SPSS output

From the results in table 4.7 above, the conclusion was that the model was a good fit as the p-value 0.034 was less than p= 0.05. It therefore means that, the model was statistically significant in explaining how FDI, inflation, interest rate and GNP per capita affects stock market development in Kenya. In addition, the probability plot in figure 4.2 indicates a linear relation of the dependent element and the independent factors.





Source: SPSS output

From figure 4.2 above, the probability plot indicates a linear relation between Mkt Cap percentage of GDP and GNP per capita growth, Real interest rate, FDI net inflows % of GDP and Inflation rate. From the statistical and graphical results, the data did not require any treatment for linearity.

#### **4.4 Descriptive Analysis**

Table 4.8 below represents a summary of descriptive analysis of the elements under study. The average Mkt cap as a percentage of GDP recorded was Ln 1.1688 with the highest amount recorded at Ln 1.64 and the least at Ln 0.60. Its variation from one year to the other was Ln 0.35908. FDI as measured by net inflows as a percentage of GDP varied from 0.01 to 3.40 with a mean of 0.6596 while the variation from one year to the next was 0.78802. Inflation rate, a measure of macroeconomic stability varied from 1.60 to 46 although the mean was recorded at 11.7629. Inflation rate variability was 8.61862. The average real interest rate was 7.8114, with a minimum of -8.01 and a maximum of 21.10 while its variation was 6.61066 from one year to the next. GNP per capita growth was average at 0.7843, highest at 5.23 and lowest at -4.74. The variability of GNP per capita growth was 2.53770 from one year to another.

Table 4.8	Descriptive	<b>Statistics</b>
-----------	-------------	-------------------

	N	Minimum	Maximum	Mean	Std. Deviation
FDI net inflows % of GDP	35	.01	3.40	.6596	.78802
Inflation rate	35	1.60	46.00	11.7629	8.61862
Real interest rate	35	-8.01	21.10	7.8114	6.61066
GNP per capita growth	35	-4.74	5.23	.7843	2.53770
Ln Mkt cap % of GDP	35	.60	1.64	1.1688	.35908
Valid N (listwise)	35				

**Source: SPSS output** 

## 4.5 Correlation Analysis of Dependent and Independent Variables

This section looks at the relationship between dependent variable that is market capitalization percentage of GDP and independent variables, which are the FDI net inflows percentage of GDP, inflation rate, real interest rate and GNP per capita growth. Table 4.9 below displays the correlation association between the dependent and the independent elements which lies between (-) strong negative correlation and (+) perfect positive correlation.

#### **Table 4.9: Correlations**

		Ln Mkt	FDI net			GNP
		Cap %	inflows		Real	per
		of GDP	% of	Inflation	interest	capita
			GDP	rate	rate	growth
Ln Mkt Cap %	Pearson	1				
of GDP	Correlation					
FDI net inflows	Pearson	.311	1			
% of GDP	Correlation		_			
Inflation rate	Pearson	- 184	073	1		
Initiation face	Correlation	104	.075	I		
Real interest rate	Pearson	006	- 118	- 248	1	
	Correlation	1000		.2.10		
GNP per capita	Pearson	.465	.153	594	037	1
growth	Correlation	1100	1100	.071		1

Source: SPSS output

From the table 4.9 above, there was a positive correlation between FDI net inflows % of GDP, real interest rate, GNP per capita growth with market capitalization while there was a negative correlation between inflation and market capitalization. This means that FDI, interest rate and GNP per capita have a positive association with stock market development while inflation rate had a negative association with stock market development. The results also showed an association among the independent variables, but it was not strong to cause multicollinearity because all the values were less than 0.70. Therefore, they can be used as determinants of stock market development in regression analysis.

#### 4.6 Regression Analysis

Here, the model parameters were estimated using the Least Squares methods. Table 4.10 represents a summary of the estimates of regression model parameters.

			Standardiz				
			ed				
	Unstandardized		Coefficient			Collin	earity
	Coeff	Coefficients				Stati	stics
						Toleran	
Model	В	Std. Error	Beta	t	Sig.	ce	VIF
1 (Constant)	.951	.165		5.770	.000		
FDI net inflows % of GDP	.107	.073	.235	1.471	.152	.933	1.072
Inflation rate	.005	.009	.117	.564	.577	.555	1.801
Real interest rate	.004	.009	.081	.493	.626	.884	1.131
GNP per capita growth	.071	.029	.502	2.474	.019	.579	1.727

**Table 4.10: Estimates of Regression Parameters** 

Source: SPSS output

From table 4.10, the following regression analysis was obtained:

#### *Ln Mkt Cap % GDP*= 0.951 + 0.071*GNP*

The model illuminate that when all determinants are held at zero (constant), the value of Mkt Cap % of GDP is 0.951. However, holding other determinants constant, a unit increase in GNP per capita growth would lead to a 0.071 unit increase in Mkt Cap % of GDP. The table also shows that only GNP/GNI per capita was useful in explaining market capitalization as a percentage of GDP at 0.05 significant level while the other variable in the model were insignificant and hence did not have any relationship with

the dependent variable. After parameters estimation, the next step was to determine the usefulness of the model as shown in table 4.11

				Std. Error	Change Statistics				
Mo		R	Adjusted	of the	R Square	F			Sig. F
del	R	Square	R Square	Estimate	Change	Change	df1	df2	Change
1	.534 <sup>a</sup>	.285	.190	.32312	.285	2.997	4	30	.034

 Table 4.11: Model Summary

Source: SPSS output

Table 4.11 above shows a model summary of regression analysis of dependent and independent elements. The value of R (correlation value) is 53.4%, which shows strong positive relationship between the independents variables (GNP per capita growth, Real interest rate, FDI net inflow % of GDP, Inflation rate) and dependent variable (Mkt Cap % of GDP). The value of coefficient of determinant ( $\mathbb{R}^2$ ), which indicates the deviations in the response variable due to changes in the predictor variables was 28.5%. This is not a perfect model since it is only capable of explaining 28.5% of the deviations in stock market development. This therefore means that, 71.5% of the deviation in stock market development was from other factors not captured in this study. Methodologically, in multiple linear regression one cannot solely rely on  $R^2$  value in concluding on the usefulness of the model as the R squared can be improved by increasing the number of determinants in the model. To supplement the findings of R squared in determining the usefulness of the model, the study used the ANOVA test in table 4.7, whereby the p-value of 0.034 is less than 0.05, hence it is significant or useful in predicting market capitalization as a percentage of GDP.

The next step was to determine whether each of the individual independent variable was significant in explaining the market capitalization percentage of GDP. This is done through the T test as provided by table 4.10.

The test hypothesis was:

H0: βi =0

H1:  $\beta i \neq 0$ 

 $\alpha = 0.05$ 

The beta coefficient of the GNP per capita according to table 4.10 was 0.071 with a tstatistic of 2.474 at a p-value of 0.019. With a less p-value than the test value then the GNP per capita was significant in determining the market capitalization at  $\alpha$ =0.05. All other factors held constant, a unit increase in GNP per capita growth would increase the market capitalization by 0.071 units, hence growth in the economy attracts more investors leading to the growth of market capitalization. The other independent variables under study proved to be insignificant in determining the dependent variable meaning that they had no relationship with market capitalization as a percentage of GDP.

#### 4.7 Discussion of Research Findings

The research tried to analyze the impact of FDI on Kenya's stock market development. The study tried to explain the dependent variable, which was the development stock market as estimated by market capitalization as percentage of GDP. The independent variable was FDI as measured by FDI net inflows as percentage of GDP, while the control variables were macroeconomic stability (inflation rate), real interest rate and economic growth as proxy by GNP/GNI per capita. The effect of each of the independent factors on the dependent element was analyzed in terms of strength and direction.

The study findings unveiled a strong positive connection between the independents factors (GNP per capita growth, Real interest rate, FDI net inflow % of GDP, Inflation rate) and dependent variable (Mkt Cap % of GDP). Though the model was only capable of explaining 28.5% of the variability in Mkt Cap % of GDP, there are other factors that affect the development of stock market which were not included in this model. At a p-value of 0.034, which was less than  $\alpha$ =0.05, the overall multiple regression model was statistically significant in predicting stock market development in Kenya.

From the analysis, the study was in contrast with the existing literature whereby FDI positively affects the development of stock market in Kenya. The study of Njeru (2013), who analyzed the impact of FDI on the economy of Kenya found a significant and direct positive connection between FDI and the economy. Also in the study of Ndung'u (2011), who sort to explore the association of development of stock market and the growth of Kenya's economy. The analysis evidence a positive association between growth of economy and Kenya's stock market development. Therefore, this means that, though a triangular causal relationship is seen to exist between FDI and stock market development in Kenya, it is not statistically significant. In terms of economic growth, the study supported Ndung'u (2011) whereby economic growth affected the stock market development in Kenya. From the findings, it can also be concluded that the effect of GNP means that the improvement of the economy is essential for the development of stock market in Kenya.

This study was also in agreement with Masila (2010) in his study to examine the determinants of NSE development. The result was that inflation did not have a relationship with stock market development in Kenya. However, the study was in contrast with Mutuku and Ng'eny (2015) in their study of macroeconomic factors and the equity market of Kenya. Their finding was a negative effect of inflation on equity market and therefore the Kenyan stock market is not an avenue for investors to perfectly hedge against inflation. This study also went an extra mile to determine the impact of interest rate on Kenya's stock market development. The result was that interest rate positively influenced the stock market development in Kenya. As expected from theory, the current worth of cash flow can be reduced by higher rate of interest, which then reduces the ability of investment to attract investors therefore shrinking the stock returns value.

# CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### **5.1 Introduction**

This summary of the research findings are revealed in this chapter, where the objective of this research paper was to establish the impact of FDI on Kenya's development of stock market. It therefore includes findings summary and conclusions based on the study, recommendations from the study and suggestions for further research as well as limitations faced while carrying out the study.

#### **5.2 Summary of Findings**

This research sort to analyze the effect of FDI on Kenya's stock market development. By employing secondary data, thirty-five years information of development of stock market, FDI, inflation rate, real interest rate and GNP per capita was obtained and analysis carried out using SPSS version 21 software. Descriptive, correlation and multi-linear regression analysis were used to test whether Foreign Direct Investment, inflation rate, interest rate and GNP per capita was related to stock market development.

The correlation analysis findings were the existence of a weak positive correlation between FDI and Kenya's development of stock market. The control variables interest rate and GNP per capita) posited a weak positive relationship to stock market development while inflation rate showed a negative correlation to stock market development. On significant of the relationship, FDI, interest rate and inflation showed to have insignificant relationship with stock market development as indicated by p values that were more than  $\alpha$ =0.05. GNP per capita proved to be significantly related to stock market development with a p value less than  $\alpha$ =0.05. The model summary presented a coefficient of determination (R-squared) value on 0.285. This means that the independent variables under study were only able to explain 28.5% of the variation of the stock market development while 71.5% of the variation of the development of stock market was associated with other variables not focused by the model. In general, the analysis showed the independent factors having a strong correlation with the development of stock market whereby the value of R was 0.534. Despite having R-squared of 0.285, the model was found to be fit in predicting the relations between the elements under study whereby the ANOVA results revealed that the p value of the model (0.034) was less than 0.0.5 as well as F statistic of p=2.997 significant at 5% level.

The regression results disclosed a positive but insignificant relation between FDI and stock market development. Inflation rate and interest rate also showed an insignificant positive relationship. There was a positive and statistically strong effect of GNP per capita as a proxy for economic growth on stock market development meaning that the growth of the economy is essential for the development of stock market in Kenya. The findings also showed that when all the dependent variables (FDI, inflation, interest rate and economic growth) are held constant or at zero, the stock market development would be 0.951. A unit increase in GNP per capita would lead to an increase in stock market development by 0.071. The model coefficients revealed that only GNP per capita was statistically significant in determining stock market development while the other variables (FDI, inflation and interest rate were insignificant determinants of the development of stock market.

## **5.3 Conclusion**

From the study findings, FDI was correlated positively to stock market development in Kenya. This means that more FDI inflows lead to improved stock market even though not to a significant extent. The study found inflation rate to have negative correlation with stock market development and we can therefore conclude that higher inflation rates tends to discourage investments in stock market leading to low stock market development. Therefore, the Kenyan stock market cannot be used to perfectly hedge against inflation. At the end of the study, the inflation was concluded to not clearly show its association with stock market development as from the model, inflation had an insignificant positive relationship with stock market development. The interest rate and GNP/GNI per capita had a positive association with stock market development meaning that stable interest rate and a growing economy attracts investors to invest in stock markets and hence its development.

It can also be concluded that the independent variables under study (FDI, inflation, interest rate and GNP per capita) influences the stock market development although not to a large extent as they only account for 28.5% of the variation in the development of stock market. This means that 71.5% of the variation of stock market development can be explained from other factors not included in this model. However, the overall model was found to be significant at 5% level where the p value was 0.034. Therefore, it can be concluded that the independent variables in this study significantly influenced the stock market development in Kenya.

The study was in contrast with the existing literature whereby FDI positively affects the development of stock market in Kenya. The study of Njeru (2013), who analyzed the impact of FDI on the economy of Kenya, found a significant and direct positive connection between FDI and the economy. Also in the study of Ndung'u (2011), who sort to explore the association of development of stock market and the growth of Kenya's economy. The analysis evidence a positive association between growth of economy and Kenya's stock market development. Therefore, this means that, though a triangular causal relationship is seen to exist between FDI and stock market development in Kenya, it is not statistically significant. In terms of economic growth, the study supported Ndung'u (2011) whereby economic growth affected the stock market development in Kenya. From the findings, it can also be concluded that the effect of GNP means that the improvement of the economy is essential for the development of stock market in Kenya.

#### **5.4 Recommendation**

The government should urgently implement appropriate policies that ensure improvement of the determinants that were insignificant as per this study that include FDI, Inflation and real interest rate to ensure that the Kenya's stock market is enhanced significantly. This is based from the findings of studies from other developing countries such as Ghana and Pakistan where FDI has proved to be a statistically significant determinant of stock market development. In addition, stable interest rates and inflation rate attract investors in stock market.

This study established that inflation, despite being an insignificant determinant of stock market development, it did not show a clear effect on stock market development. Based on the findings of other studies in developing countries, in countries with stable inflation rate, investors can use stock markets to hedge against inflation. Therefore, the study recommends that policies should be put in place to ensure stable inflation rate such that investors can use stock market to hedge against inflation and hence the improvement in stock market.

GNP per capita was discovered to have a strong significant relation with development of stock market in Kenya. This means that improved economies possess incentives that attract investors especially the stock markets. For example, growing economy means that the employment rate is high and therefore people are able to save and invest in viable project especially in stock. Therefore, improving the economy can be an alternative approach of promoting stock market improvement and growth.

#### 5.5 Limitations of the Study

This research was based on annual data for 35 years. It is therefore uncertain on whether the findings would be similar if a longer period was considered or if more compounded period such as quarterly was used. Such a period can take into consideration the major economic conditions. In addition, the rate of biasness and generalization is reduced as one quarter or month may not be similar or equal to another.

The quality of data was another limitation, whereby the study employed secondary data that is already obtained and accessible unlike primary data that is a first-hand information whose quality can be enhanced. Secondary data once they are recorded cannot be altered, therefore if errors were made in arriving at that amount then there are no chances of rectifying and therefore the result can be affected by those errors.

This study focused on selected variables that affect Kenya's stock market development and not all the determinants of stock market development mainly due to limitation of data availability. Many factors determine stock market development as they were categorized into demand, supply, institutional and economic factors. Having all the variables in the model may lender the analysis biased.

#### **5.6 Suggestions for Further Research**

Further study should be carried out to determine other factors especially the supply demand and institutional factors that influence the stock market development. This will help to determine which factors have greater influence on stock market development and by how much. Most studies have focused on mainly macroeconomic variables and so other factors can be viewed of their effects as well.

This study employed the descriptive, correlation and regression analysis on the data. Similar study can be carried out using other analysis tools to see if similar results will be maintained. This is with particular emphasis on the causal study in order to discover the direction of the relationship of FDI and stock market development in Kenya. This will help provide a clear picture on whether FDI is a substitute or complement of development of stock market in Kenya.

This study also suggest that a similar project be done using a more compounded period such as quarterly or monthly to investigate whether similar results will be maintained or not. This will ensure that the focus is given to the various economic conditions as well as the rate of generalization as all time periods are not the same. This is due to the fact that most figure are given of the last month of the year and not an average.

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## **APPENDICES**

# Appendix I: Data Collection Form

Year	Mkt Cap %	FDI 1	net	Inflation rate	Real Interest	GNP/GNI
	of GDP	inflows	%		rate	per capita
		GDP				growth

# Appendix II: SPSS Data Sheet Sample

Years	Mkt Cap	Ln Mkt Cap	FDI net	Inflation	Real	GNP per
	% of GDP	% of GDP	inflows % of	rate	interest rate	capita growth
			GDP			
1982	4	0.6	0.202	22.3	2.605	-2.924
1983	4.2	0.62	0.397	14.6	3.572	-1.785
1984	5.1	0.71	0.174	9.1	3.835	-2.059
1985	4.73	0.67	0.47	10.8	5.258	0.439
1986	5.1	0.71	0.452	10.5	4.864	3.409

1987	5.6	0.75	0.494	8.7	8.157	2.007
1988	5.67	0.75	0.005	12.3	8.026	2.186
1989	6.02	0.78	0.751	13.5	6.815	2.108
1990	5.28	0.72	0.666	15.8	7.333	-0.389
1991	5.56	0.75	0.231	19.6	5.746	-2.264
1992	7.76	0.89	0.078	27.3	1.825	-3.71
1993	18.48	1.27	2.532	46	3.413	-4.736
1994	42.62	1.63	0.104	28.8	16.428	0.718
1995	22.3	1.35	0.467	1.6	15.802	3.078
1996	14.93	1.17	0.902	9	-5.777	2.801
1997	13.82	1.14	0.473	11.2	16.88	-1.842
1998	14.82	1.17	0.188	6.6	21.096	0.817
1999	12.59	1.1	0.403	5.8	17.454	-0.873
2000	9.88	0.99	0.873	10	15.327	-1.787
2001	8.05	0.91	0.041	5.8	17.813	0.843
2002	10.89	1.04	0.21	2	17.358	-1.962
2003	28.06	1.45	0.548	9.8	9.771	0.005
2004	24.17	1.38	0.286	11.8	5.045	2.506
L				1		
2005	34.07	1.53	0.113	9.9	7.61	3.871
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2006	44.06	1.64	0.196	6	-8.01	3.349
2007	41.76	1.62	2.281	4.3	4.819	3.775
2008	30.24	1.48	0.266	15.1	-0.985	-2.15
2009	29.62	1.47	0.314	10.5	2.837	0.475
2010	36.15	1.56	0.445	4.1	12.026	5.23
2011	24.32	1.39	0.333	14	3.841	3.664
2012	29.31	1.47	0.324	9.4	9.457	1.139
2013	40.52	1.61	0.675	5.7	11.548	2.621
2014	42.61	1.63	1.537	6.9	7.816	2.28
2015	32.93	1.52	2.253	6.6	5.896	3.33
2016	27.41	1.44	3.403	6.3	7.899	3.279