RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENTS AND ECONOMIC GROWTH 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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ABSTRACT

Since the end of cold war and fall of the communism in late 1980`s, many counties have been restructuring the economies to make them more competitive in globalised world. These countries have looking for alternatives that can help the economies grow and achieve a desired level capable of sustaining the bulging populations. One of the major areas that have been considered for this is to increase the level of foreign direct investment. This has lead to an increased interest in the issue of foreign direct investments (FDI) and the role it plays in the overall economic development, among various stakeholders both at national and international levels. The increase of FDI to various countries particularly developing countries like Kenya has continued to fuel debate on their development potential in recipient countries. The part played by foreign direct investments foreign direct investments in supporting growth of economy has been the area under discussion for a considerable period of time among various groups of people with interest in economy including those who receive and are beneficiaries of foreign direct investments in general and Kenya specifically. These discussions have also resulted in many studies being carried out assess not only the effects and impact of FDI to economic growth but also the relationship between FDI and economic growth. Despite this, the numbers of empirical studies that examine the relationship between economic growth and foreign direct investment in Kenya are few and not very conclusive, creating a literature gap on the same subject. This study therefore, sought to establish the relationship between foreign direct investments and economic growth in Kenya and establish, using causal study whether changes in the foreign direct investments cause changes in the economic growth or whether changes in GDP causes changes in foreign direct investments. The general objective of this study therefore was therefore to evaluate the relationship between foreign direct investment and economic growth of Kenya. To achieve this objective this study applied the time series analysis. The conclusion of this study is that there is a positive relationship foreign direct investments and economic growth in Kenya. The study also concludes the there are no causation links between the foreign direct investments and economic growth in Kenya.

Keywords: Foreign direct investments, Economic growth, Granger causality, Kenya economy.

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ABBREVIATIONS TABLE

AGOA	AFRICA GROWTH AND OPPORTUNITY ACT
AIC	AKAIKE INFORMATION CRITERION
COMESA	COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA
EPZ	EXPORT PROCESSING ZONE
FDI	FOREIGN DIRECT INVESTMENT
GCF	GROSS CAPITAL FORMATION
GDI	GROSS DOMESTIC INVESTMENT
GDP	GROSS DOMESTIC PRODUCT
IBM	INTERNATIONAL BUSINESS MACHINE
ICT	INFORMATION COMMUNICATION TECHNOLOGY
KQ	KENYA AIRWAYS
MDG	MILLENIUM DEVELOPMENT GOALS
OECD	ORGANIZATION OF ECONOMIC COMMISSION FOR DEVELOPMENT
OLS	ORDINARY LEAST SQUARE
USA	UNITED STATES OF AMERICA
UK	UNITED KINGDOM
UNCTAD	UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT
UNCTADstat	UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT STATISTICS
UNDP	UNITED NATION DEVELOPMENT PROGRAMME
USD	UNITED STATES DOLLAR
VAR	VECTOR AUTOREGRESSION
VECM	VECTOR ERROR CORRECTION MODE

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

For developing countries including Kenya, attracting and encouraging Foreign Direct Investment (FDI) has been a major feature of their development strategy, because investments and remittances are considered vital elements for economic growth and generation of job opportunities (Kayonga, 2008). Antwi et al (2013), argue that for developing economies in Africa, foreign direct investment has taken a key position in driving economic growth such that policymakers have taken a notice and have shifted the focus on attracting more FDI so as to sustain the continued economic growth that has been witnessed in the recent past.

In the last decade of the 20th century there was a major shift in the extent and make up of cross-border capital inflows into developing emerging countries and Foreign direct investment (FDI) has come to overshadow all other capital flows. According to Caves (1996) FDI is the investment made by a corporation outside its home country. It is the flow of long-term capital based on long term profit consideration involved in international production. There are many benefits of FDI both to the host country and the home country, these benefits are noted by different authors. For example, Alfaro et al (2003) indicated that apart from the direct capital financing it provides, FDI can provide precious technology and know-how to the host developing countries by nurturing linkages with local companies. These technological innovations by international firms play a fundamental role in the economy.

Foreign direct investment (FDI) has been termed as a major source of resource which is capable of providing technology needed to promote economic growth. It is not easy to generate this resource using domestic savings, and even if it were possible, some technologies would be difficult to import from overseas. This is because the transfer of such

technology to corporations without prior experience of using it is complex, dangerous, and costly (Duce & Maitena, 2003). Foreign direct investment brings many benefits to the host country which cannot be appropriated by the host as their income. These benefits includes transfers of technical knowledge specific to production and distribution, improving industrial set up, generating work understanding for the local employees, the introduction of contemporary management and accounting techniques, the establishing finance and trading networks, and the developing telecommunications services. FDI in service sector can raise the host country's competitiveness by improving the efficiency of capital and facilitate the host country to attract fresh capital on good terms.

By changing a country's comparative advantages and raising its competitiveness through transfer of technology and the effects of numerous external benefits, foreign direct investment as well as local investment can improve a country's economic level and pattern of business in many ways that can enhance income. As one major source of capital investments Foreign Direct Investments (FDI) is perceived as a major contributor of economic growth and hence assisting in achieving strategies of national development. The consequence of this is that FDI will play a vital and crucial role in the achievement of national goals which include economic growth. Furthermore, with the major economic shock emerging from time to time it appears that achievement of MDG goals is jeopardized especially if Kenya does not develop polices that can drive economic growth to achieve the MDG Goals.. According to World Bank (2009), FDI had reduced by 8.3% which is a significant drop that may lead to difficult situations for majority of developing countries including Kenya. However prior to 2009 FDI to Africa had had gone up on average in terms of ratio to GDP and in terms of absolute volumes, while real GDP per capita and human development index as computed by United nation development program (UNDP), (Sharma and Gani, 2004).

1.2 Statement of problem

In the past few years, Kenya and other developing countries in Africa has witnessed an era of economic growth and some periods of economic crisis. A number of factors have been attributed to this growth including the foreign direct investments. However, the degree to which FDI relates to economic growth and what influence the FDI has on economic growth of Kenya has not been adequately captured in various studies and researches that have been conducted on them. The Studies carried out in Kenya for example (Wanjala, 2001 and King'ang'i, 2003) have revealed the level of FDI to Kenya to be small, both in totality and comparatively compared with the developed and other developing countries. However, Kenya has preserved some advantages regionally, in attracting FDI mainly because of its trained labour force and a central logistics location. Foreign investors in Kenya have been making relatively small investments although they numerous and spread across a wide variety of sectors. They have contributed considerably to some of the more vibrant sectors in the economy, that includes horticulture, and to diversification of exports (World Bank, 2010). This particular study by the World Bank does not indicate the relationship between FDIs and Kenya's economic growth across the period. Other studies, such as (Wanjala, 2001), have looked at the determinants of FDI and (King'ang'i, 2003) on impact of local private investment without looking at the specific impact on Kenyan economy. Nyamwange (2009), found that foreign direct investment in Kenya stimulates the country`s growth of economy but he also indicated that by and large the effects of foreign direct investment on the economy as a whole may not be significant. Lack of studies on the real relationship between foreign direct investment and economic growth in Kenya leaves an empirical gap which this study therefore endeavored to close.

1.3 Objective of the study

This study analyzed the relationship between foreign direct investment and economic growth in Kenya and therefore it aimed at addressing the relationship and causal link puzzle. The general objective of this study was to assess the relationship between foreign direct investment and economic growth of Kenya. The specific objectives of this study included among other;

1. To determine the relationship between the foreign direct investment and economic growth of Kenya.
2. To Determine the causal links between foreign direct investment and economic growth of Kenya

1.4 Significance of the study

The existing empirical evidence of relationship between foreign direct investment and economic growth and the associated benefits was not very conclusive. Most of the empirical research that has been undertaken in this area has used sectional data for a number of countries to establish the impact relationships. There is therefore limited exhaustive country specific research studies to establish the relationship and the interaction between foreign direct investment and economic growth of Kenya specifically with emphasis on the both foreign direct investment. Chowdhury and Mavrotas (2006) proposed that individual countries studies should be carried out to ascertain this impact relationship. This thus provides a major incentive for this study. For Kenya, a limited number of empirical studies have been undertaken to establish the fact. The findings of this study therefore is to add to the existing body of literature, a valuable guide to especially policy makers and a source of reference for future scholarly research.

CHAPTER TWO

LITERATURE REVIEW

Organization of Economic Commission for Development (OECD) defines FDI as cross-border investment by a resident entity in one economy with the aim of acquires a long-term interest in an enterprise resident in another economy. (World Bank, 1996), describes FDI as the investment made to acquire a long-term management interest in an establishment that is operating in a economy other than of the investor.(Caves,1996) describes FDI as movement of long-standing capital that is based on considerations for long term benefits involved in international productions.

The lasting interest entails the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the enterprise. Ownership of at least 10% of the voting power, representing the influence by the investor, is the basic criterion used. Foreign direct investment (FDI) occurs when a firm invests directly in new establishments to manufacture and/or market in an overseas country. A firm it becomes a multinational enterprise once it undertakes FDI. Foreign direct investment (FDI) is an essential ingredient in the integration of international economies. FDI enable creation of direct, steady, and yet long-lasting relations between economies of the world. It further allows and encourages the transfer of technology and know-how between nations, and this in turn enables the home economy to advance its products in the international markets. With all these characteristics FDI can be said to be an important catalyst and a vehicle development within the host country and indeed in the world.

2.1 Theories of Foreign Direct Investment

Over the years a number of theories have been developed by eminent scholars in relation to the FDI. These theories deal with FDI from different viewpoints. This study will focus on four of these theories as follows.

2.1.1 Production Cycle Theory

This theory was brought forward by Professor Vernon in 1966. When developing this theory Vernon (1966), explained the assorted categories of foreign direct investment made by American companies in Europe, particularly Western Europe in manufacturing industry after the Second World War came to an end. Vernon explained that production cycle has four distinct stages; innovation, growth, maturity, and decline. According to Vernon FDI is as a result of this production cycle which involves production transfer to regions. The process begins with first stage where companies develop products of home and high income countries. As the cycle progress companies reach a stage growth and maturity where a need arises to satisfy overseas markets. Finally the maturing products begin to return declining prices. All this transformation leads to foreign direct investment.

2.1.2 The Theory of Location

According to this school of thought, multinational companies would invest in a location where either the raw materials are readily available or where the market for their products are close or near. The result for this is foreign direct investment based on the two fundamental reasons. If a location continues to attract more investment, then an agglomeration effect is created. This involves concentration of industries on a specific location, which further allows companies to save on certain costs such as transport and ultimately achievement of economies of scale and at the same time spur economic growth in the location.

2.1.3 The Internalization Theory

This theory endeavors to explain the development of multinational companies and their drive to achieve foreign direct investments. The theory was initially put forward by Buckley and Casson (1976), and then later by Casson (1982). Buckley and Casson demonstrate that multinational companies organize their particular activities especially

internally so that they can gain a competitive advantage and then exploit that advantage. It is this advantage that was also elucidated by Hymer (1976) where it is demonstrated that FDI takes place where firms exploit specific advantages which can easily outweigh costs of having foreign operations. According to Hymer (1976) the multinational companies emerge as a result of market imperfections that lead to a deviation from perfect competition in the market for final product. Hymer acknowledged that FDI is a decision that is made at the strategic level of an enterprise as opposed to capital market financial decision.

2.1.4 The Eclectic Paradigm of Dunning

This theory was developed by professor Dunning .It is a theory that proposes a framework which is three-tiered for a company to follow when determining if it is beneficial to pursue direct foreign investment. The theory argues that in order for a foreign direct investment to have positive benefits, then presence of following advantages is key: Product or company specific advantages, such as a comparative advantage, Location specific advantages such where the company derives greater benefit through a foreign establishment and Market internalization which means that, it would be better for the enterprise to utilize a foreign opportunity by itself, instead of going through an arrangement agreement with a overseas firm.

Dunning (1988), agrees with the internalized theory that it is not easy for an enterprise to patent its unique abilities and its knowhow. He therefore explains that combining internal resources with location advantages would require foreign direct investment. Eclectic paradigm configures sets of advantages that can either encourages or discourages an enterprise from undertaking overseas activities and become a multinational enterprise. These advantages includes; Ownership which result from accumulation of assets, technological capacities, firm size, knowledge, marketing ability and industry type. (Andrei, 2009; Stoiana &Filippaiosa, 2008), elucidated that how investment is done, is connected directly to the

advantages the foreign investor want obtain including internationalization, property and location.

2.2 Trends of Foreign Direct Investment in Kenya

In the context of global perspective, FDI has been increasing exponentially since the end of Second World War and this trend has been the same even in developing countries like Kenya. World Bank (2007) had indicated in 2007 that the worldwide FDI had hit $ 1.1 trillion in the year 2006 and this further arisen in the recent years. According to Buckley (2003), inflow of FDI globally, could be attributed to two main reasons. The very first one is the liberalization of markets and deregulation resulting from multinational agreements. The second reason is ability of multinational corporations to spread their tentacles worldwide.

However this upwards trend has not been evenly distributed among the various developing economies because the major recipient in recent times has been Asia and parts of Latin America. In sub Sahara Africa, the upsurge of FDI is evident in many countries particularly those that are rich in resources. UNCTAD (2007) reported that although there was an upsurge in FDI to Sub Sahara Africa, its global share of FDI inflows reduced from about 3.3% in the year 2003 to about 2.7% in the year 2006. Another UNCTAD (2013) report, FDI to economies of Africa rose by 5% in 2012 to over USD $ 50 Billion most of which went to extractive industries. In the common market for southern and eastern Africa (COMESA), where Kenya is a member, FDI rose more than six times between 2000 to 2006, and in the same period FDI to COMESA accounted to for 49.5% of the total FDI to the whole of Africa.

For Kenya Since it became independent in 1963 it has been one of the most favoured destinations for FDI in sub-Sahara Africa. This situation has been enabled by a number of reasons including the country`s strategic location, a relatively developed infrastructure and a

pool of well skilled human resources. However the trend of the FDI has not been upward trajectory throughout. In 1980s and 1990s the relationship with foreign direct investments has been tumultuous and Kenya had lost its magnet to attract foreign direct investment due to economic reasons such as structural adjustments programmes and none economic related reasons such as political instability and graft. In 1990s Kenya`s performance was considerably inferior in comparison to its immediate neighbors and sub Saharan peers. FDI inflow in 1996-2003 aggregated to $39 million per year, which is much smaller in comparison to Uganda and Tanzania inflows that went to about $220 million and $280 million, respectively, from insignificant amounts in the 1980s. Corresponding average to other sub-Saharan Africa countries was six times higher. However developing countries attracted $41 of FDI in 1996-2003 per capita, when Kenya could only manage inflows of $1.3 per capita.

The main reason for this reduced performance is the deterioration of its relationship with World Bank and International monetary Fund, whereby loans were suspended due to corruption. At the inception of new millennium and the years that followed Kenya experienced an improvement in attracting FDI, particularly after the successful 2002 general elections, and then followed by a momentous increase after 2006. In 2007, the country came up Kenya Vision 2030 whose main objective is propel the country in to a middle income country by the year 2030. One of the sub-pillars of this vision is create an environment which would enable the country to attack huge foreign direct investments. Since 2007-2008 when the country suffered a setback because of post election violence, FDI has continued with its upward growth although not to the standards envisaged by the government and policy makers.

A number of factors have contributed to this increase of FDI into Kenyan economy including strategic location on the African continent, availability of cheap yet skilled labour

force and relatively liberalized market economy among others. These are of global factors that were initially identified by UNCTAD in 1996. According to UNCTAD (1996), factors contributing to increase in global increase of FDI include globalization of production, mergers, and acquisition of local firms and worldwide financial integration. However, according to Kinuthia (2010), the government must undertake arrays of reforms to attract more FDI such as establishing free trade zones, targeted incentives, and improvement of infrastructure. The following diagram represents the trends of FDI in to the Kenya economy between 1970 and 2012.

2.3 Composition of Foreign Direct Investment in Kenya

When foreign investors make a decision to invest in a given economy their decision is made based on different reasons, the priority being profit motivation. In Kenya the composition of foreign direct investment is diversified the recent notable areas that majority of the FDI have gone to includes energy sector, banking and financial services, agriculture particularly floriculture horticulture, textile and tourism. Interest in agriculture has been due to favorable local climatic conditions and relatively good infrastructure in transport. Multinationals such as Karuturi and the Dutch-owned Oserian have invested heavily in rift valley particularly the Naivasha area. Their main investments are in floriculture and horticulture. Investment in textile sector has been mainly to the opportunities that are provided by the U.S.A in its Africa Growth Opportunity Act (AGOA). FDI in Manufacturing is concentrated sectors for goods, including the food and beverage sector. Majority of foreign investment in manufacturing sector has been located in the Export Processing Zone (EPZs), with a good number of them being in textiles related with AGOA.

FDI that has gone to services has been mostly directed to a various sub-sectors such as banking and financial services, telecommunication, and tourism although in recent years ICT sector has also been of great interest with big multinational companies such as Google

and IBM indicating their willing to invest there. The telecommunications sector has witnessed foreign shareholding in the mobile phone services industry increase. For example Vodafone of the U.K holds 40% Safaricom, airtel Kenya is wholly owned by Bharti airtel of India, Telkom Kenya`s majority shareholder is Orange of France and the fourth mobile operator Yu mobile is fully owned by Essar group of India. On Technology and Skills, FDI has given rise to more complex technology use or advanced processes in manufacturing in several firms such as General Motors and Tetrapak. Tetrapak has applied World Class Manufacturing techniques to its Kenyan operations since 2001 as part of a global programme. The Dutch-owned Oserian (horticulture) has installed one of the world's biggest geothermal heated greenhouses in order to reduce disease pressure and increase rose yield through more uniform temperatures.

In 1990s the Kenya government decided to privatize government owned enterprises which included Telkom Kenya, Kenya power, Kengen, Kenya Airways (KQ) among others. The scheme of privatization ranged from outright sale to concessions, sale at the Nairobi Stock Exchange, and through securing strategic partnerships. The FDI in Kenya led to diversified results in the areas that they are directed. When the safaricom and Telkom were privatized there was a rapid expansion of related infrastructures and uptake of their services by the population. Increased investment by foreign investors in other mobile phone service providers also led to easy availability of high quality services with number of subscribers reaching over 30 million by the end of 2013.

2.4 FDI and Economic growth as measured by GDP

Economic growth is usually measured by GDP parameter of a given country although more parameters can be applied. Gross Domestic Product is described to include the value of goods and services produced in a country within a specified period usually a year. Ordinarily

when FDI is made in an economy it will be included in measuring GDP. Previous research works have indicated that there is a contribution of FDI to the GDP, and in most cases that contribution has been positive, although the extent varies from one case to another. Loungani and Razin (2001) indicated that foreign direct investment was one of the capital flow in an economy, others being portfolio investment and primary bank loans. They reported that foreign direct investment was more resilient that the other sources. According to OECD (2002), foreign direct investment raises efficiency of resources and increases productivity factor in the economy in which the FDI is made, and therefore FDI will influence growth positively.

Other studies have concluded that although the contribution of foreign direct investment to economic growth is positive, it will depend on other varied factors in economy in which the FDI is directed. These factors include the sector in which the FDI operates (Alfaro et al, 2003). Alfaro argued that FDI operating in manufacturing sector usually has positive effect, while the one operating in primary industries tends to be negative and the one in services sector is not very clear. Alfaro later explained that where an economy has well developed banking and financial sector, then such a sector will be able to gain more compared with other sectors (Alfaro et al, 2003). Some studies have concluded that the other factors that can determine the effect of foreign direct investment on growth will include degree of how open the economy is and availability of highly skilled human resources as it was observed by Chowdhury and Mavrotas (2003). (Chowdhury & Mavrotas 2003) also concluded that countries with high rate of economic growth can attack far better FDI compared with countries whose economies are struggling economically.

It is also important to note that not all the studies on foreign direct investment have returned a verdict of positive contribution in the economic growth. According to Carkovic and Levine (2002), FDI does not have vigorous influence on growth. Similarly Mwilima

(2003) observed that although most African countries have given a lot of incentives including tax holidays, they have not been able to attack sufficient foreign direct investment. This assertion is significant considering that a good number of African countries have reported a high rate of economic growth in the recent past. In fact Mwalima argued that some of the foreign direct investments have brought more economic problems, giving an example of Zambia among other. With all these conclusions, then developing countries should the foreign direct investment phenomenon with caution. The following figure shows the historical economic growth of Kenya between1970 to 2012.

2.5 Relationships between FDI and Economic growth

Existing substantial literature has largely agreed that there exist a relationship between FDI and economic growth. What vary from the literature are the kind of relationship that exist and the extent of that relationship. Majority of these studies find a positive relationship, in that increase in foreign direct investment has a positive effect on economic growth of the concerned economy. According to Dees (1998), FDI affects positively economic growth by influencing technical change within the economy of the host country. Choong et al (2010), argue that the effect foreign direct investment on economic growth is limited and that portfolio investment and debt from foreign creditors have effects that are negative provided that the stock market has not developed to a threshold where effects can be positive. (Hermes & Lensink, 2003), observed that a positive relationship between variables is realized through strong and global channels of financial markets that have extended all over including developing countries like Kenya.

This argument tends to concur with assertion by Durman (2004) that for effects of foreign direct investment to be effectively positively then the economy must have absorptive capacity. When assessing impact of foreign direct investment on Chinese exports and economic growth, Zhang (2006) observed that there is a possibility of foreign direct

investment precipitating lower domestic savings and investment, which by itself is a negative impact which in turn may slow the economic growth. The other arguable effect is that since most of the foreign direct investment is invested in urban areas except those in agricultural sectors, then it would appear that the majority rural areas may not have any relationship and impact with foreign direct investment. According to Li and Liu (2005), there exists a strong paired relationship between GDP growth and foreign direct investment in both developed and developing economies .Based on the study they did to examine the relationship between the two variables, Li and Liu also conclude that this paired relationship is not only on just foreign direct investment but also through other factors that interact with foreign direct investment.

2.6 Causation Link between FDI and GDP growth

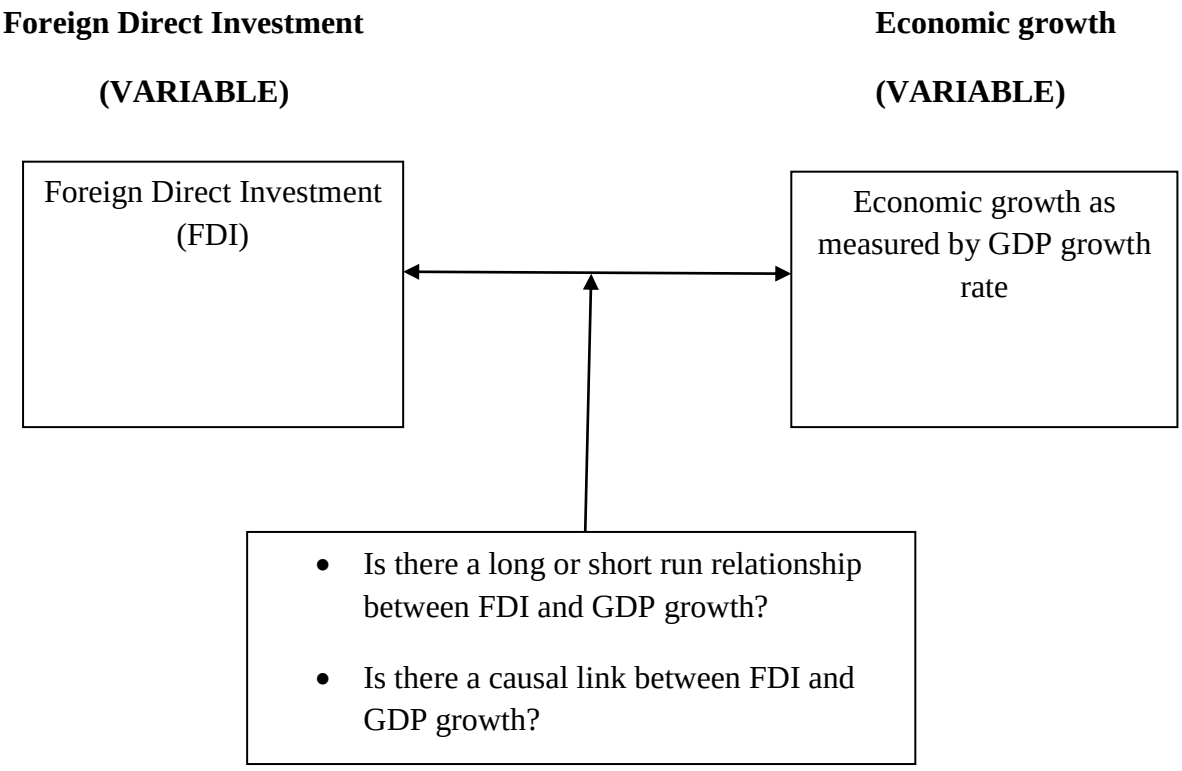
A wide range of studies have indicated that there is a casual link between foreign direct investment and GDP growth, although the extent of the causation defers. According to Choe (2003), causation between foreign direct investment and GDP growth is bi-directional in that either element can cause the other. Carkovic and Levine (2002) concluded that even though foreign direct investment inflows might move hand in hand with economic expansion, they do not necessarily exert a growth effect that is independent of other factors. Hansen and Rand (2004) on the other hand suggested that foreign direct investment on average has a considerable long-term impact on GDP regardless the level in which an economy is developed. They also argued that if an economy grows rapidly, it's likely to attract a higher level of foreign direct investment. Manpreet et al (2013) found that GDP per capita and FDI are integrated in long run. They also found that in India and Bangladesh there exist a bi-directional relationship between foreign direct investment and growth after the liberalization of economies in 1991.

2.7 Conceptual Framework

The convectional measure of economic growth is real gross domestic product (GDP). Increase in GDP, in a given economy is related to many factors, some that are major while others are minor. One of the factors considered to have a relationship with GDP growth is the foreign direct investment. This study moved towards determining the relationship between foreign direct investment and economic growth. The following illustrative framework presents the overall concept:

CONCEPTUAL FRAMEWORK

FIGURE 1



Source: Author (2014)

This study aims to assess the relationship between FDI and economic growth of Kenya using data collected over a period of time. There is wide consensus that if a country is to alleviate poverty and improve standard living of its people, then it must have a sustainable

and well managed economy. Such an ideal economy can only be achieved if there is a continuous economic growth. There is therefore a need to assess the various factors that lead to economic growth and as it has been alluded by the cited literature, FDI is one of those factors .For Kenya and other developing countries the effect of the FDI is ambiguous and assessing it real effect is paramount so that the government can put in place economic policies that don't hinder either the FDI or other economic factors. This study follows the locational theory of foreign direct investment that suggests that agglomeration effect is created if a location continues to attract more of foreign direct investment. Location for purposes of this study would be Republic of Kenya.

Borenstein *et al*. (1998) carried out a regression on cross-sectional data for a number of countries and concluded that FDI is a critical vehicle for economic growth although he also noted that FDI is just one of the many factors that influence economic growth. Another similar study had been done by Balasubramanyam et al. (1996) using OLS regressions on cross- section data of some forty six developing countries for period ranging from 1970 to 1985.According to this study, FDI leads to effects on economic growth through what they termed as positive spillovers. The study also observed that the positive spillovers are stronger in countries that have put in place export promoting policies.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

This study applied exploratory research approach whose main objective was to determine the relationship between FDI and economic growth in Kenya. Data applied in this study was annual secondary data collected from various sources and which were subjected to time series analysis to achieve the set objectives. The study used data relating to Kenya over the period from 1970 to 2012.The data for this study was collected from World Development Indicators (WDI); Version 2013 published by the World Bank and Inward and outward foreign direct investment flows, annual, 1970-2012 published by the UNCTAD, (UNCTADstat).

3.2. Data Analysis

The study applied econometric models in establishing the relationship between the two identified variables. Johansen cointegration test, Granger causality test and Vector Autoregressive model were used using STATA as the statistical software.

3.2.1. Preliminary Tests

Unit root testing. The use of non-stationary data leads to spurious result that may show that a relationship between two variables exist where it does not. Time series are assumed to be stationary and therefore there is a need to test whether the data under consideration is stationary or not. The early and initial work on testing for a unit root in time series was done by Dickey and Fuller (Dickey and Fuller, 1979).For purposes of this study, unit root test was done by carrying out Augmented Dickey–Fuller (ADF) test. The following regression model was estimated in carrying out the Augmented Dickey–Fuller (ADF) test:

$$\Delta y_t = \alpha + \beta y_{t-1} + \sum_{j=1}^{k} \lambda_j \Delta y_{t-j} + e_t$$ ……..equation i

Where;

Δy_t = the change in the series that was considered for period $_{t,}$ α =the constant, β is the coefficient on y_{t-1}, λ_j is the lag, and Δy_{t-j} are the lagged value changes. The selection of lag length was done by using the information selection criteria of Akaike Information Criterion (AIC) and the Schwarz' Bayesian Information Criterion (SIC/BIC/SBIC) and ensuring that the residuals are white noise. In order to meet the assumption for OLS, other Preliminary tests were carried out which included normality test and tests for Heteroscedasticity. Shapiro-Wilk's test was used to test normality of the data whereas the Breusch-Pagan test was used to test for Heteroscedasticity.

Cointegration Test. After completing the unit root indicated above there was a need to carry out a cointegrating test. This test usually is used to determine the long-run relationship between variables under consideration two variables. Johansen's test procedure is used to determine whether there exists a cointegrating vector among the variables (Johansen, 1988). According to Aydemir and Demirhan (2009), where the series are not integrated to order one, it's not possible to test causality using the cointegration test. In such a situation, the Toda-Yomamoto (1995) technique is used in establishing the causal relationship between series. Using Johansen test methodology, the cointegration test was based on the following equation:

$GDP_t = \beta\ fdi_t + \varepsilon_t$ ..... equation ii

Where GDP_t is the economic growth at time period t, β is the vector coefficient of foreign direct investment at time period t, *fdi* is the foreign direct investment and ε_t is the error term. The two variables will be cointegrated if the error term (ε) is stationary. The ADF test was be used to check stationarity of the residual series.

Lag length. If after testing for Cointegration, it emerges necessary to apply VAR model then a further process will be carried out to determine the lag length using the information selection criteria such Akaike Information Criterion (AIC) and correlograms. The process will assist in determining the number lags that may required in case dependent variable values in the far past are still affecting future values of the same variable.

Granger causality test. Regression analysis is able to deal with the dependence of a variable on another but may not necessarily indicate causation between the two variables. According to Kendall and Stuart (1967), any statistical relationship, however strong and however suggestive, can never establish causal connection and therefore issues and ideas of causation must come from statistics from elsewhere, and eventually from some theory. The challenge of causation between variables was solved by carrying a Granger causality test. This test was suggested by Granger (1969), where he demonstrated that if ***X*** causes ***Y*** then historical values of ***X*** have information that may help to predict ***Y*** over and above the information contained in historical values of ***Y*** alone. In order to carry out the granger test this study used lagged values- fdi_{t-1} and gdp_{t-1} variables of interest. The test involves estimating the following pair of regression equations;

$$fdi_t = \sum_{t=1}^{n} \alpha_1 \, fdi_{t-1} + \sum_{j=1}^{n} \beta j \, \mathrm{GDP}_{t-j} + u_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{equation iii}$$

$$GDPgrowth_t = \sum_{t=1}^{n} \lambda_1 \, gdp_{t-1} + \sum_{j=1}^{n} \delta \mathrm{j} \, \mathrm{GDP}_{t-j} + u_2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{ Equation iv}$$

Where fdi_t is the foreign direct investment and gdp_t is the economic growth rate at time period t, *u* is the error term. The assumption is that error terms are to be uncorrelated. The first equation indicates that current *fdi* will be related to past values of *gdp* and *fdi*. Equation indicates that the current *gdp* is related to past values of *gdp* and *fdi*.

The null hypothesis for equation one is: $Ho: \beta_j = 0$,

The null hypothesis for equation two is: $Ho: \delta_j = 0$

3.4 Vector Auto Regression Model

The Vector Auto regression (VAR) model was used to analyze the relationship between the foreign direct investment and economic growth. The main justification of using Vector Auto regression (VAR) is that, it is possible to simulate the variable`s over time in a set to any other variable in a system of equations (Sichei, 2002). According to Orden (1986), VAR entails estimation of regression equation whereby current value of every variable is expressed as a function of its own lagged values and of the other selected variables. For purposes of this study a reduced form VAR model was applied, whose characteristic is that it models each endogenous variable in the system, as a function of the of its own lagged values and of all the other endogenous variables in the system as proposed by Engle and Granger (1987). A reduced form VAR in a system of equations is written in matrix form as:

$$y_t = c + A_1 y_{t-1} + A_2 y_{t-2} + \cdots + A_p y_{t-p} + e_t \quad \text{.....equation v}$$

Where *c* is a n×1 vector of constant terms, $A_1, A_2 .....A_p$ are n×n matrices of coefficients, Y_t is a n×1 vector of endogenous variables and e_t is a vector of serially uncorrelated error terms that are assumed to have a mean of zero and a covariance matrix Ω.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.0 Introduction

The data analysis is presented in this chapter. The initial step was to examine the features of the data by applying visual aids and basic descriptive statistics before carrying out basic data analysis using linear regressions. Consequently a diagnosis of the data for stability of variance was made. When this was completed then the data was tested for unit root and cointegration and then modeling of the data is done using a using multivariate time series.

4.1 Descriptive Statistics

The basic descriptive statistics in relation to the data under examination are presented in table 1 indicated below.

Descriptive Statistics

TABLE 1

Variable	Obs	Mean	Std. Dev.	Min	Max
year	43	1991	12.55654	1970	2012
fdimilions	43	66.8798	122.9639	0.39	729.05
gdpgrowth	43	4.35954	4.350836	-4.66	22.17

The results from basic descriptive table indicate that the average inflow of FDI in to kenya between 1970 to 2012 is $ 66.88033 million dollars per year while the average economic growth for the same period was 4.35956 % per year.In the same period standard deviation for FDI was 122.964 while that of economic growth was 4.351296.The minimum amout of FDI record was $ 0.39 million and a maximum of $ 729.0515.For the economic growth the lowest rate of miminum growth ever recorded for the period was -4.655% and the highest was 22.17%.

4.2 Regression Analysis

In this section, the data is modeled using regression models. A regression model is fitted by regressing with the Gross domestic product growth as the response and the foreign direct investment as the predictor variable and also foreign direct investment as the response and Gross domestic product growth as the predictor variable using the following econometric models;

$GDPgrowth_t = \alpha + \beta\, fdi_t + \varepsilon_t$ ……equation vi

$FDI_t = \alpha + \beta\, gdp_t + \varepsilon_t$ ……equation vii

Regression analysis was carried out on both variables and the results are indicated in Table 4.2 and Table 4.3 shown below.

The dependent variable in regression one (Table 2) is foreign direct investment (fdi), and the variable name is shown at the left top of regression results table. The amount here is measured in millions of dollars. Std. Err. is Standard Error, t test statistics, P>|t| the p values, and 95% Confidence Interval. The results can be written in regression equation form as:

Predicted FDI = 57.74078 + 2.09644GDPGROWTH.This indicates that for each percentage increase of GDP, FDI increases at 2.09644 million dollars.

Regression Result I

TABLE 2

Source	SS	df	MS	Number of obs =	43
				F(1, 41) =	0.23
Model	3492.16469	1	3492.16469	Prob > F =	0.6365
Residual	631552.73	41	15403.7251	R-squared =	0.0055
				Adj R-squared =	-0.0188
Total	635044.895	42	15120.1165	Root MSE =	124.11

fdimilions	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gdpgrowth	2.095801	4.40165	0.48	0.637	-6.793513	10.98511
_cons	57.74305	26.95273	2.14	0.038	3.310909	112.1752

Regression Result II

TABLE 3

Source	SS	df	MS	Number of obs =	43
				F(1, 41) =	0.23
Model	4.37204817	1	4.37204817	Prob > F =	0.6365
Residual	790.678334	41	19.2848374	R-squared =	0.0055
				Adj R-squared =	-0.0188
Total	795.050382	42	18.929771	Root MSE =	4.3915

gdpgrowth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
fdimilions	.0026239	.0055107	0.48	0.637	-.0085052	.0137529
_cons	4.184052	.7644058	5.47	0.000	2.640303	5.727801

The dependent variable regression two (Table 3) above is percentage real gross domestic growth (Gdpgrowth), and the variable name is shown at the left top of regression results table. The growth here is measured in percentage increase. Std. Err. is Standard Error,

t t test statistics, P>|t| the p values, and 95% Confidence Interval. The results can be written in regression equation form as:

Predicted GDPGROWTH = 4.183985 + 0.0026252FDI. This signifies that for each one million dollar increase of FDI, GDP increases at 0.0026252 units (0.26252 %)

The theoretical expectation of the model coefficients was positive coefficient for all the independent variables whose implication is that a unit increase in foreign direct investment would have a positive impact on the performance of the economy. Similarly a unit increase in Gross domestic performance would have a positive impact on the performance of the inflow of foreign direct investment. The results of the regression model were consistent with the theoretical expectation.

4.3 Post estimation analysis

However, after regression analysis it was necessary to examine the adequacy of the fitted regression model by carrying out post estimation tests. The diagnostic tests that were carried out to test for adequacy of the model entailed checking whether the OLS estimates assumptions have been satisfied by a way of residual analysis. The OLS estimates assumptions are that there is Zero Conditional Mean, No Heteroscedasticity, No Serial Correlation and Normally Distributed Errors. The results for the tests are presented as under;

4.3.1 Heteroscedasticity tests

One of the main assumptions of regression is variance of errors is homoscedastic, that is it is constant for the observations made. To check whether this assumption is violated then Heteroscedasticity tests is carried out. The result for this test is presented in the table 4 below.

Heteroscedasticity on FDI and GDP Growth

TABLE 4

Variable	**FDI**	**GDP growth**
Chi 1(2)	3.47	5.30
Prob > Chi (2)	0.06	0.02

In the case of FDI the p-values of test above is greater than alpha of 0.05, we therefore accept the null hypothesis and conclude that there is no evidence the there is Heteroscedasticity. However in the case of GDP growth the p-values of test above is less than alpha of 0.05, we therefore reject the null hypothesis and conclude that there is significant evidence the there is Heteroscedasticity.

4.3.2 Normality test

Normality is a prerequisite of numerous statistical test whose main objective is establish whether the data Ii normally distributed. For purposes of this study Shapiro-wilk test was used to test for normality. The results are presented in table 5 below.

SHAPIRO-WILK TEST FOR NORMAL DATA

TABLE 5

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
FDI	43	0.49469	21.122	6.447	0.00000
GDPGROWTH	43	0.81805	7.605	4.288	0.00001

The null hypothesis for this test is that the data are normally distributed. The Prob < W value listed in the output is the p-value. If the chosen alpha level is 0.05 and the p-value is less than 0.05, then the null hypothesis that the data are normally distributed is rejected. If the p-value is greater than 0.05, then the null hypothesis is not rejected. In this study the p-value is less that 0.05, as shown by results in Table 4.4 above, and therefore the null hypothesis that the data are normally distributed is rejected.

4.3.4: Serial correlation tests

Serial correlation is a correlation of a given variable with itself over a period of time. It is used in determining whether the past values of a variable predicts the future values of the same variable. The Durbin Watson test was applied to test for serial correlation and the results were as under;

Durbin-Watson d-statistic (2, 43) = 1.480882

The Durbin–Watson d statistic, 1.480882, is far from the center of its distribution (d = 2.0). Given 43 observations and two regressors in the model, and therefore the null of no first-order serial correlation rejected. This result of no correlation was confirmed by the Durbin's alternative test for serial correlation (Table 4.6) and Breusch–Godfrey test for higher-order serial correlation (Table 4.7) as shown below. The results of post estimation indicates that a number of assumptions of OLS have been violated and therefore there is a need to carry out further test on the data before the study concludes anything. The data analysis that could deal with these post estimations shortcomings was the time series analysis.

Durbin's Alternative Test for Autocorrelation.

TABLE 6

Durbin's alternative test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	2.409	1	0.1206

H0: no serial correlation

BREUSCH-GODFREY LM TEST FOR AUTOCORRELATION.
TABLE 7

Breusch-Godfrey LM test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	2.443	1	0.1181

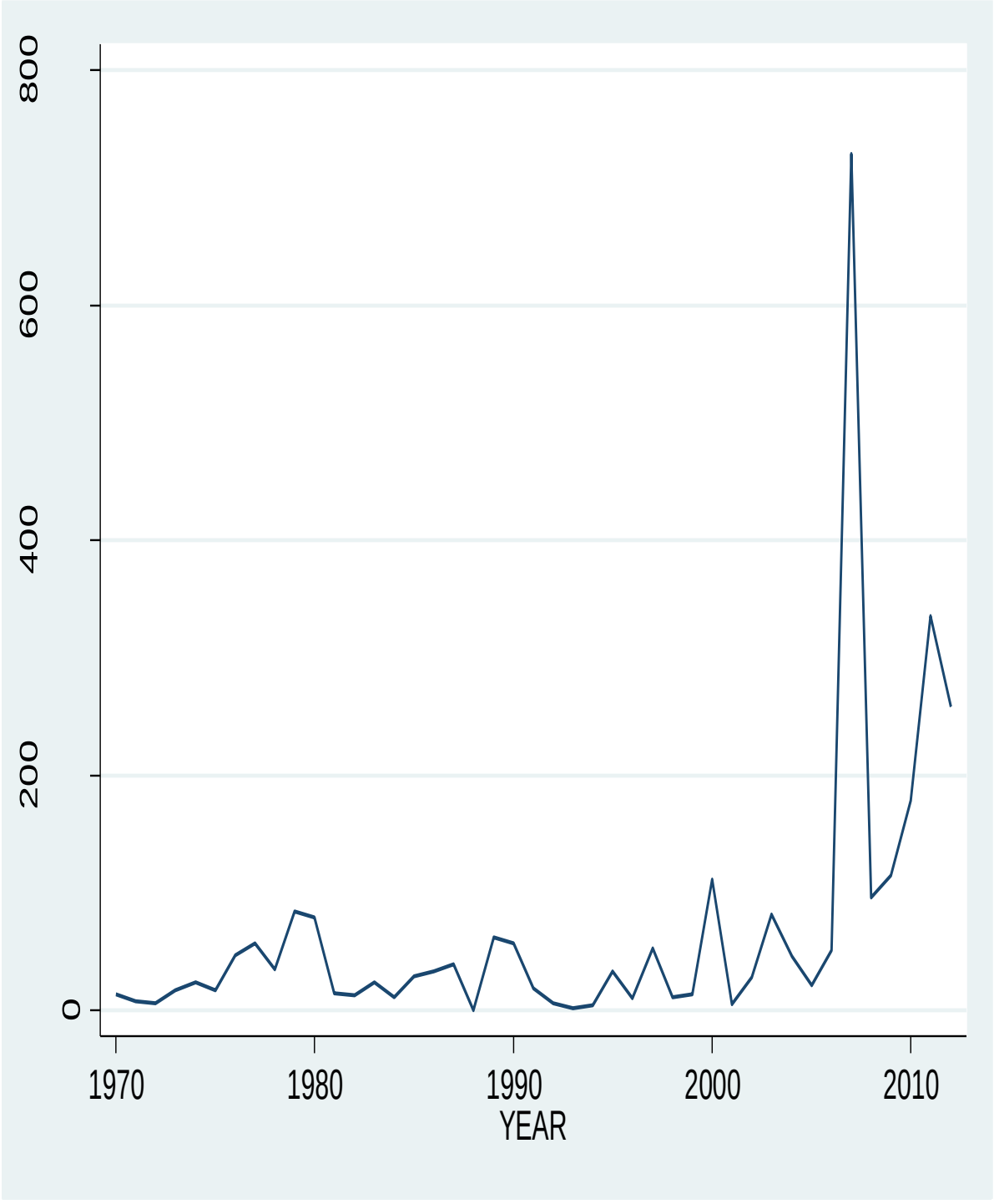
H0: no serial correlation

4.4 Time series analysis

Time series analysis takes into consideration the fact that data collected over a period of time may contain an internal structure such as trend and autocorrelation that should be elucidated. In this study before conducting for any test or time series analysis, a physical examination of the data using graphical analysis (see graphs 4.1 and 4.2 below) was carried out and it indicated that the data did not have any trend and therefore there was no particular tendency by the data over the period under analysis.

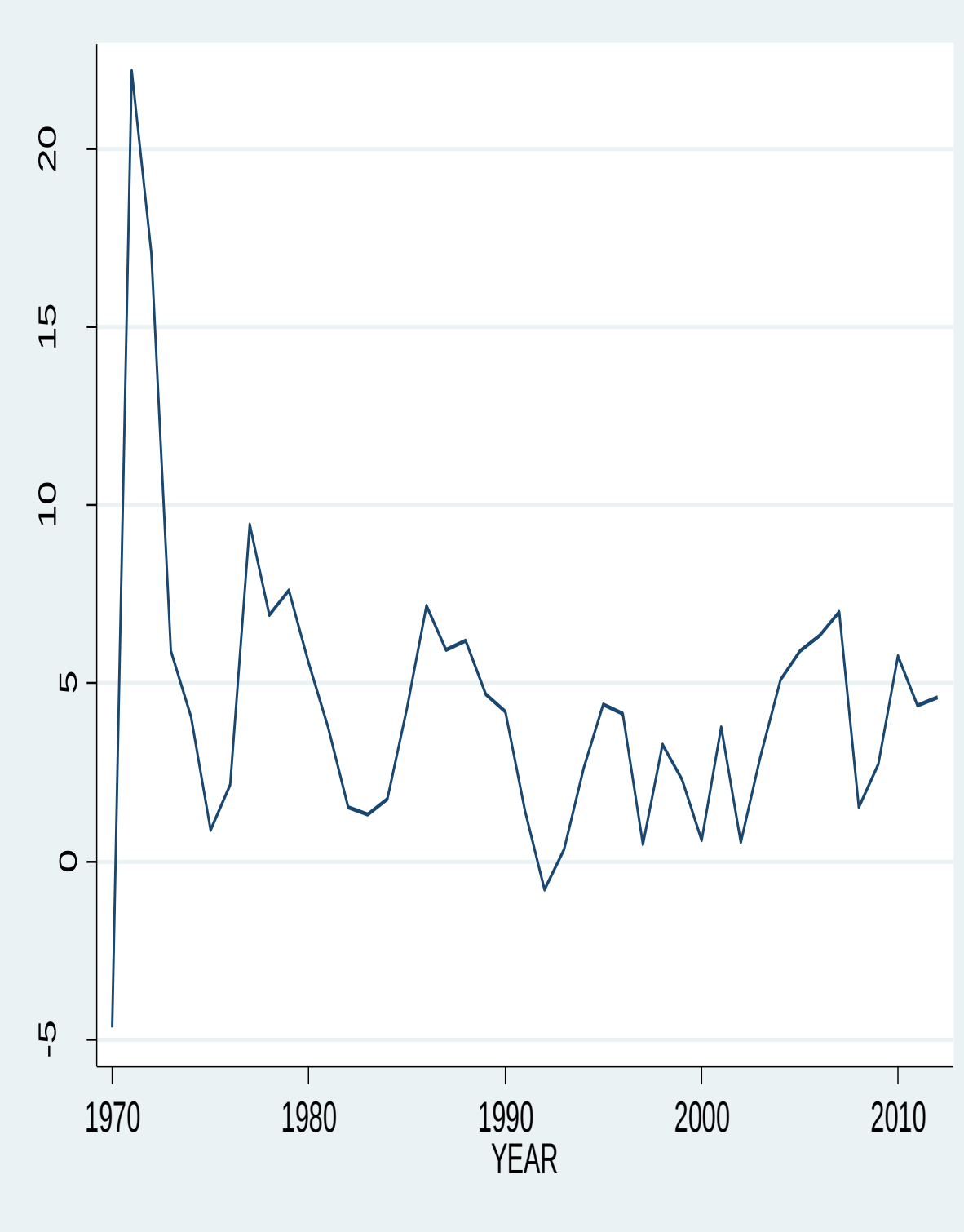
FDI Trend Chart

FIGURE 2



GDP GROWTH TREND CHART

FIGURE 3



4.4.1 Unit root testing

The data was tested for stationarity using both dickey-fuller test and Phillips–Perron unit-root test for both consistency and confirmation purposes. The results for both tests are shown below in tables. Table 8 is for dickey-fuller test and table 9 is for Phillips–Perron unit-root test.

DICKEY-FULLER TEST FOR UNIT ROOT FOR FDI AND GDP GROWTH
TABLE 8

	Test Statistic Value Z(t)	1% Critical Value	5% Critical Value	10% Critical Value
FDI	-4.805	-3.634	-2.952	-2.61
GDP growth	-5.16	-3.634	-2.952	-2.61

FDI-MacKinnon approximate p-value for Z (t) = 0.0001

GDP growth-MacKinnon approximate p-value for Z (t) = 0.0000

The results for FDI in table 4.8 indicate that test statistic,-4.805 is smaller than -3.634 (1% critical value) so, we reject the null at 1%. The same situation appears at 5% or 10% critical values. This is also confirmed by MacKinnon approximate p-value for Z (t) = 0.0001 which says that null should be rejected because p- value is less than 0.05.The conclusion therefore is that unit root does not exist and therefore the data for FDI is stationary.

The results for GDP growth in table 4.8 indicate that test statistic,-5.160 is smaller than -3.634 (1% critical value) so, we reject the null at 1%. The same situation appears at 5% or 10% critical values. This is also confirmed by MacKinnon approximate p-value for Z (t) = 0.0001 which says that null should be rejected because p- value is less than 0.05.The conclusion therefore is that unit root does not exist and therefore data for economic growth is

stationary. This situation is confirmed by the Phillips–Perron unit-root test as shown by the results of the tests in table 9 below.

PHILLIPS–PERRON UNIT-ROOT TEST FOR FDI AND GDP GROWTH
TABLE 9

		Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
FDI	Z (rho)	-33.12	-18.36	-13.04	-10.54
	Z (t)	-4.853	-3.634	-2.952	-2.61
GDP growth	Z (rho)	-38.531	-18.356	-13.044	-10.54
	Z (t)	-5.371	-3.634	-2.952	-2.61

For FDI MacKinnon approximate p-value for Z (t) = 0.0000

For GDP growth MacKinnon approximate p-value for Z (t) = 0.0000

4.4.2 Lag selection

According to Enders (1995) it is necessary to ensure that the error term is not mispecified by selecting the appropriate lag length. The criteria for selecting lag length are many including the Akaike Information Criterion (AIC), Sequential modified Likelihood ratio (LR) criterion, the Final Prediction Error (FPE) criterion, the Schwarz Bayesian Information Criterion (SBIC) and the Hannan-Quinn Information Criterion (HQC) among others. In all of these criteria for determining the lag length, the decisional rule is to select the model with the lowest value of information criteria. This study`s lag selection information criteria are presented in table 4.10 shown below. The results indicate that the lowest information criterion for LR, FPE and AIC and HQIC is lag 1 and SBIC is lag 0. From these results, the optimal lag length is identified to be one.

LAG SELECTION INFORMATION 1

TABLE 10

Varsoc fdimilions gdpgrowth							
Selection-order criteria							
Sample: 1974 - 2012			Number of obs = 39				
lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-331.424				91393.8	17.0987	17.1293	17.184*
1	-324.514	13.82*	4	0.008	78769.1*	16.9494*	17.0412*	17.2054
2	-323.485	2.0565	4	0.725	91941.1	17.1018	17.2549	17.5284
3	-320.577	5.8179	4	0.213	97721.7	17.1578	17.372	17.7549
4	-316.367	8.4182	4	0.077	97560	17.147	17.4225	17.9148
Endogenous: fdimilions gdpgrowth and Exogenous: _cons								

LAG SELECTION INFORMATION 2

TABLE 11

Varsoc gdpgrowth fdimilions							
Selection-order criteria							
Sample: 1975 - 2012			Number of obs = 39				
Lag	LL	LR	DF	p	FPE	AIC	HQIC	SBIC
0	-323.807				95990	17.1477	17.1784	17.2339*
1	-316.976	13.662*	4	0.008	82755.2*	16.9987*	17.0907*	17.2573
2	-315.875	2.2019	4	0.699	96629	17.1513	17.3046	17.5823
3	-312.686	6.3786	4	0.173	101391	17.194	17.4086	17.7973
4	-308.933	7.5049	4	0.111	103735	17.207	17.483	17.9827
5	-305.35	7.167	4	0.127	107716	17.2289	17.5663	18.177
Endogenous: gdpgrowth fdimilions								
Exogenous: _cons								

4.4.3 Cointegration test

According to Stock & Watson (2007), Cointegration refers to a situation whereby that two or more series or variables share a stochastic trend, an indication of an existing long run relationship. To examine the long run relationship between the foreign direct investment and GDP growth, the series is tested for cointegration. Where it appears that the series are cointegrated, the Granger representation theorem suggests that there is a corresponding error correction term and an error correction model must be constructed. The initial step, involves examining the order of integration of each variable. According to Amalendu (2012), where the series are integrated of order one, it would be necessary to use Johansen procedure to determine existence of any cointegrating vector among the two variables. Earlier the study had established earlier the appropriate lag length to be one and therefore the next step is to determine the number of cointegrating equations. The decisional rule is that when the trace statistic is smaller than the critical value, we accept the null hypothesis of no cointegration. For purposes of this study a Johansen test procedure for testing cointegration was performed and the results are presented in table 4.11 shown below.

JOHANSEN TESTS FOR COINTEGRATION

TABLE 12

Trend: constant				Number of obs=42	
Sample: 1971 - 2012				Lags=1	
Maximum rank	Parms	LL	eigen value	Trace Statistic	5% Critical Value
0	2	-397.91093	.	41.0924 *	45.41
1	5	-386.66707	0.41458	18.6046	23.76
2	6	-377.36474	0.35787		

From the results table below, the study determines that the trace statistics at r=0 of 41.0924 is bigger than its critical value of 15.41 and therefore we cannot reject the null of having no rank (rank = 0) and therefore there is no cointegration. This signifies that there is no long run relationship between FDI and GDP growth over the period under consideration and therefore in the test equations for Granger causality, an error correction term would not be necessary and under such circumstances Vector Error Correction Model (VECM) would not be appropriate to use but instead this study applied Vector Autoregressive Model (VAR Model).

4.6 Vector autoregression model

In the earlier test for integration it was established that there was no cointegration of the variables, subsequently, Vector autoregression model (VAR Model) was chosen. Vector autoregression model (VAR) was pioneered by Sims (1980).It is a technique that could be applied to characterize joint dynamic behavior of a number of variables without the need for strong restrictions of the type needed in the identification of structural parameters that may be underlying. In this study a VAR model was estimated and results presented below in table 4.15 (see appendix below). The VAR equation model according to the results is also presented below. VAR Equations are as follows.

FDI_t = 46.88445 + 0.236029fdimilion + 1.504666gdpgrowth……equation vii

$GDPgrowth_t$ = 3.671951 - 0.0040585fdimilion + 0.2653405gdpgrowth…..... equation viii

The results from the VAR estimation indicate that present values of economic growth are affected by past values of itself and past values of the foreign direct investment. This means that a change in the foreign direct investment may lead to a change in the economic growth as indicated by the insignificant t-values and p-values.

4.5 Granger causality

One of the principal objectives of this study was to examine the causal relationship between foreign direct investment and the economic growth in Kenya. The Granger causality test was used to examine the direction of influence between two variables. This test was suggested by Granger (1969), where he demonstrated that if ***X*** causes ***Y*** then historical values of ***X*** have information that may help to predict ***Y*** over and above the information contained in historical values of ***Y*** alone. In order to carry out the granger test this study used lagged values- fdi_{t-1} and gdp_{t-1} variables of interest. For each equation the Wald tests reports that the coefficients on all the lags of a dependent variable are jointly zero. For each equation in a VAR, the study tests the hypothesis that each of the other dependent variables does not Granger Cause the dependent variable in that equation. The equations are presented in the previous chapter. The results are reported in table below:

GRANGER CAUSALITY WALD TESTS
TABLE 13

Equation	**Excluded**	**chi2**	**df**	**Prob > chi2**
Fdimilions	gdpgrowth	0.12615	1	0.722
fdimilions	ALL	0.12615	1	0.722
gdpgrowth	fdimilions	0.63288	1	0.426
gdpgrowth	ALL	0.63288	1	0.426

In carrying out the Granger Causality test, FDI is regressed on its own lagged values and on lagged values of GDP growth and use the Wald test statistic to test the null hypothesis that the estimated coefficients on the lagged values are jointly zero. Therefore the null hypothesis that foreign direct investment does not Granger-cause Gdp growth is tested

against the alternate that foreign direct investment Granger causes GDP growth. If a p - value > 0.05, we fail to reject the null hypothesis. From the equations above, we fail to reject the null hypothesis and conclude that foreign direct investment does not Granger cause GDP growth and GDP growth does not Granger-cause the foreign direct investment.

4.7 Post estimation analysis

In order to check for robustness of the model in modeling the relationship between the foreign direct investment and economic growth a post estimation analysis of the model was performed. The initial check was for autocorrelation in residuals of VAR using the Lagrange multiplier test. Thereafter the stability condition of VAR estimates is checked. After fitting a VAR, it is required that variables be covariance stationary. The results for both checks are as follows;

LAGRANGE-MULTIPLIER TEST
TABLE 14

lag	**chi2**	**df**	**Prob > chi2**
1	3.4489	4	0.048569

H0: no autocorrelation at lag order

The p-value at lag one is less than 0.05. We accept the null hypothesis of no autocorrelation at lag order 1.

CHECK STABILITY OF VARIANCE: EIGENVALUE STABILITY CONDITION

TABLE 15

Eigenvalue	Modulus
.2956318 + .3764323i	0.478643
.2956318 - .3764323i	0.478643
0.4661644	0.466164
-0.2573409	0.257341

All the eigenvalues lie inside the unit circle. VAR satisfies stability condition. The results in table indicate that estimated VAR is stable since the modulus of each Eigen value is strictly less than one.

4.8 Impulse response functions

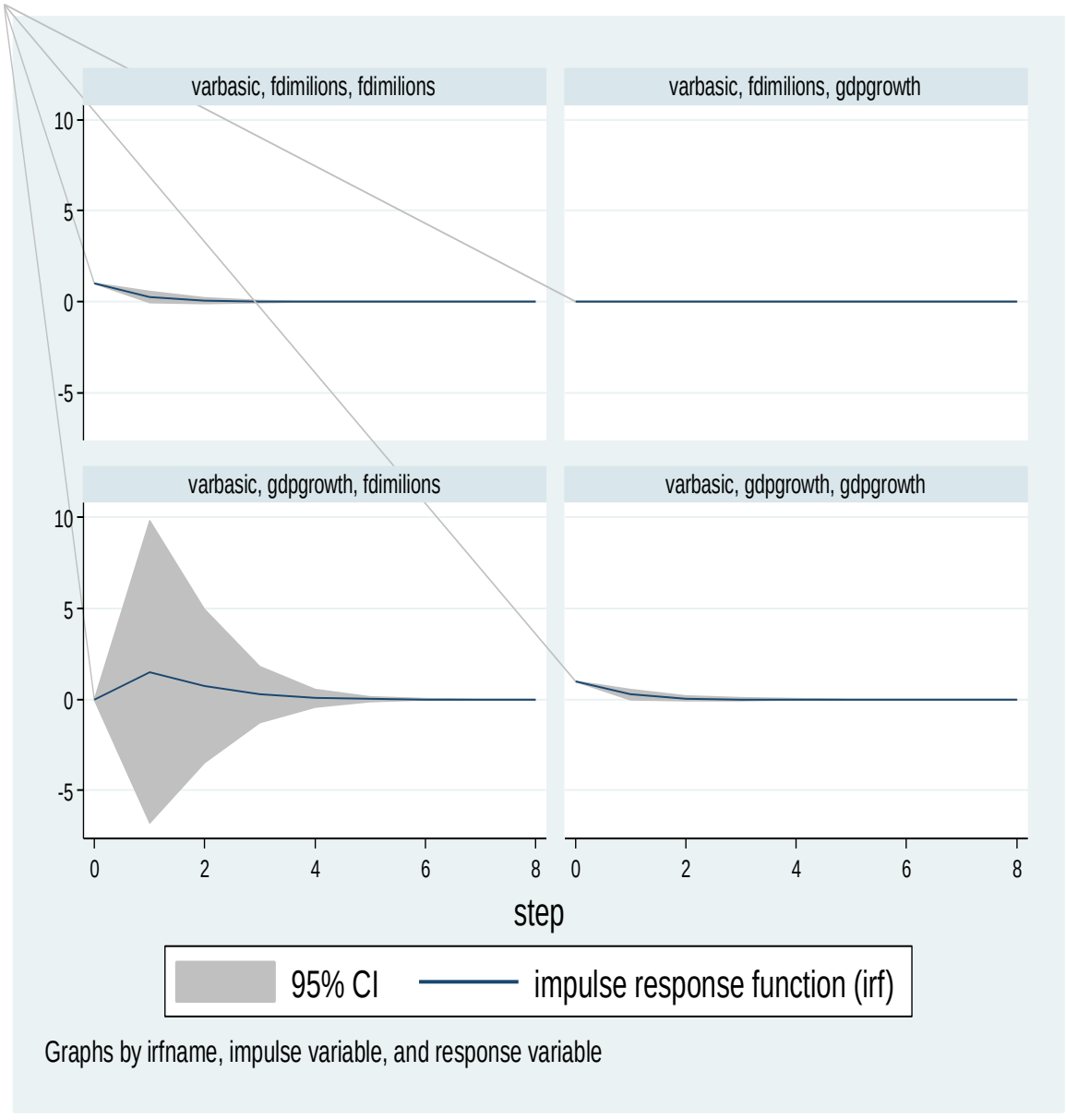
This study examined the impulse response functions analysis using the VAR analysis. The examination provides an insight into the dynamics of the variables of the system. The decomposition of variance shows the quantity of information that each variable contributes to the other variables in the autoregression. It establishes the amount of forecast error variance of every variable is explained by exogenous shocks to the other variables. Exogenous shocks can be described as factors or events, usually unpredictable, which come from outside of a given system and may have a great effect on a given variable.

According to Shan (2002), an impulse response functions examination can indicate how each variable under consideration responds to shocks over time. The coefficient estimates presented in the appendix are used in the derivation of impulse responses. The impulse response analysis links the current value of the error term to the future values of Y_t or equivalently, the current and past values of the error term to current values of Y_t. The plots

and impulse responses that follow summarizes the results of the shock evaluation, indicating the responses of each variable over the time period to an initial one standard deviation positive shock to each of the two variables in the VAR model. The impulse response function indicates how economic growth responds to shocks by foreign direct investment and vice versa. The results for impulse response function are indicated in Figure 4below.

IMPACT OF SHOCK ON FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH OF KENYA

FIGURE 4



The figure above shows the impact of a unit standard deviation shock on FDI and GDP growth. A unit of standard deviation shock on the FDI does not result to deviations in the GDP growth. However, a shock on the economic growth resulted in a significant decrease in the FDI which reaches its peak in the estimated first period which is followed by a positive slope up to about the fifth period and later becomes flat and constant from period six. This positive slope would indicate the FDI recovering after the economic shock. This result is consistent with integration test which determined that there was no long-run relationship between the FDI and economic growth as variables of consideration.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The findings of the study, recommendations and areas for further research are presented in this chapter based on data analysis results.

5.2 Discussions

The main motivation for this study was the fact that there have been a lot of discussions emanating from the perceived and real steps that have been taken by the Kenya government to orient its international political and economic relationship in the recent past. The perception has been that Kenya has been systematically cutting off its relationship with western countries that are main source of foreign direct investment and has instead been leaning towards the eastern countries especially the people's republic of china. The argument has been that Kenya government must put a lot of energy on relationships that bring a lot of foreign direct investment into the country.

The main objective of this study was to determine the relationship between the foreign direct investment and economic growth of Kenya and provide an objective recommendation. To achieve this objective, annual time series data were collected from 1970 to 2012. The Data was tested for compliance with the OLS assumptions, stationarity and then analyzed using inferential statistics. The specific objectives of the study were to determine whether there exists a long run or a short run relationship between the foreign direct investment and the economic growth of Kenya and also to determine whether there exists a causal link between the two variables. The study employed Vector Auto-regression (VAR) model. The main justification for the use of

VAR model is that apart from the fact that it is possible to simulate the response over time of an own disturbance of a variable and also disturbance on the other variables in a system of equations, the result of cointegration pointed towards using it to achieve an objective analysis. Johansen cointegration test was applied to establish the relationship between the variables and Granger causality technique was employed to determine the causal link and effect relationship between the two variables.

5.3 Conclusions

This study examined the relationship between foreign direct investment and economic growth in Kenya using annual time series data from 1970 to December 2012 which was the main objective of this study. The initial regression analysis indicates that there exist a strong positive relation between foreign direct investment and economic growth. This is in consistent with other finds of previous studies such as (Borenstein *et al*., 1998) who concluded that FDI has some effects on economic growth and therefore relationship exists. The common point of agreement in most studies is that FDI has capacity to stimulate effects on the overall economic set up a given country. This is the similar situation in Kenya and other developing countries.

The next step was to establish whether the data series is stationary by carrying out a unit roots test. Test result show that the data of the variables are stationary. Then a cointegration test was carried out using the Johansen Cointegration test to determine the long run relationship between the two variables. Test results show point to the fact that that there is no cointegrating relationship and therefore that is there is no lasting co-movement between the variables. Having determined absence of a long run relationship, the Granger Causality test was carried to determine the causal link between foreign direct investment and economic growth.

The results indicate that there is no causality between the two variables in either way. This means that for the period under consideration movement of FDI, whether an increase or decrease did not cause noticeable change in direction of economic growth. The main explanation for this could be that volume of FDI inflow in to Kenyan economy has not been big enough to have a noticeable effect. This is confirmed by the fact the average FDI inflow into Kenya over the same period has been $ 66.88033 million dollars per year (see Table 4.1;descriptive statistics).This a smaller quantity compared with other developing countries such Peoples` Republic of China that have been attracting colossal amounts of FDI and have changed the structure and makeup of the economy. However although the study concludes that there is no causality, this does not conclusively mean that FDI is not necessary in the economy of Kenya. This is because some impacts of foreign direct investment in Kenya cannot be quantitatively measured. For example, acquisition of knowledge, better image internationally and technology transfer may take a considerable period of time before their impact is seen on economy of Kenya.

Similarly, in the same period under consideration movement of economic growth, whether an increase or decrease did not cause noticeable change in direction of Foreign Direct investment. Economic growth in Kenya has been inconsistent through the period under consideration, with some periods experiencing stunted growth and sometimes negative growth has been reported. This has been considered as the main reason why the Economy has not been attracting significant foreign investment. The average economic growth over the period under consideration has been 4.1% annually (see Table 1;descriptive statistics).This is considered to be a low economic growth that may not have dramatic effects.In fact under the Kenya`s Vision 2030 under implemenation to achieve middle income status, has contemplated a susutained economic growth of minmum 10% per year to achieve the above

mentioned objectives.This is clear indication that average the avergare growth of 4.1% annually, may not have been enough to cause a change on Foreign direct investment.

5.4 Recommendations

This study confirms the widely held view that there exist a clear relationship between foreign direct investment and the economic growth of a given economy. The study therefore makes recommendations to government and policy makers to come up with policies directed at improving the level of foreign direct investment into Kenya. While steps have been taken in the past to increase the level of foreign direct investment including formation of Kenya Investment Authority in 2004 to spearhead a campaign of attracting investors into Kenya, there is still much more that is need to be done to improve the situation. Implementation of vision 2030 should fast track in order to increase the level of economic growth that may be a magnet for foreign direct investment.

Suggested areas for further research include identification and assessment of the major factors that significantly affect inflow of foreign direct investment in to the economy, specifically for Kenya. Identification of critical factors will assist in making rational decisions in relation to foreign direct investment and it will further assist policy formulation and implementation. In addition, it's clear from most studies that have dealt with FDI that they focused on the positive relationship and effects of FDI on economic growth but negative side of this relationship is rarely mentioned. This is an area that needs further examination in order to have a balanced literature on these two variables and how related with each other.

5.5 Limitations of the study

This study carried out analysis on secondary data of foreign direct investment relating to Kenya for the period 1970-2012, and focused on time series analysis of the data, to determine the relationship between foreign direct investment and economic growth in Kenya.

The study also analyzed the trends of Foreign Direct Investment inflow in to Kenya economy. However, the focus of this study was limited to the analysis of relations between the two variables and does not dwell into other factors that affect either of these two variables both in the short run and long run.

REFERENCES

Alfaro L. (2003). Foreign direct investment and growth, does the sector matter? Harvard Business School.

Alfaro L., A. Chanda, S. Kalemli O, & Sayek, S. (2003). FDI and Economic Growth: The Role of Local Financial Markets. Journal of International Economics, forthcoming.

Amalendu, B. (2012). A Causal Relationship between Stock Indices and Exchange Rates-Empirical Evidence from India. Research Journal of Finance and Accounting, 3(2222-1697).

Andrei, L. C. (2009). Economie Europeană, Editura Economică, Bucureşti.
Balasubramanyam, V.N; Salisu, & M; Sapsford, D. (1996), Foreign Direct Investment and Growth in EP and IS countries. The Economic Journal, 106, 92-105.

Antwi, Atta-Mills EFE, Atta-Mills G and Zhao X. (2013). Impact of foreign Investment on Economic growth: Empirical Evidence from Ghana, *International Journal of Academic Research in Accounting, Finance and Management Science 3(1).*

Bera, A. K. & Jarque, C. M. (1981). An Efficient Large-Sample Test for Normality of Observations and Regression Residuals, Australian National University Working Papers in Econometrics 40, Canberra.

Borenstein, E., Gregorio, D & Lee, J. (1998). How Does Foreign Direct Investment Affect Economic Growth? Journal of International Economics, vol. 45, pp. 115-172.

Buckley, P.J. (2003). FDI and Growth for Developing Countries: MNEs and the Challenges of the "New" Economy.

Buckley, P.J. & Casson, M.C. (1976). The Future of the Multinational Enterprise, Homes & Meier: London.

Carkovic M. & Levine R. (2002). Does foreign direct investment accelerate economic growth? University of Minnesota Department of finance. Working paper.

Casson, M. C. (1982).Transaction costs and the theory of the multinational enterprise, in A.M. Rugman (ed.), pp. 24-43, New Theories of the Multinational Enterprise. New York: St Martin's Press.

Caves, R.E.(1996). Multinational Enterprise and Economic Analysis. Cambridge, England: Cambridge University Press.

Choe, J.I .(2003). Do foreign direct investment and gross domestic investment promote economic growth? Review of development economics, 7, 44-57.

Choong, et al. (2010). Private capital flows, stock market and economic growth in developed and developing countries: A comparative analysis, Japan and the World Economy March 2010, volume 22, issue 2.

Chowdhury, A. & Mavrotas, G. (2003). FDI and growth: what causes what? Wider Conference. Online

Chowdhury, A., &. Mavrotas, G. (2006). FDI and Growth: What Causes What? World Development, 9-19.

Dees, S. (1998). Foreign direct investment in China: determinants and effects, Economics of Planning. 31: 175-194.

Dickey, D. A. and Fuller, W. A. (1979). Distribution of Estimators for Time Series Regressions with a Unit Root, Journal of the American Statistical Association 74, 427—31.

Duce, M. (2003). Definitions of Foreign Direct Investment (FDI): a methodological note. Banco de España.

Dunning, J. H. (1988). The Eclectic Paradigm of international production: a restatement and Some possible extensions, Journal of International Business Studies.

Durham, J. B. (2004). Absorptive capacity and the effects of foreign direct investment and Equity foreign portfolio investment on economic growth. European Economic Review 48.

Enders. (1995). Applied econometric time series, John Wiley and sons inc.1995, New York.

Engle, R. & Granger, C.J. (1987). Cointegration and Error Correction; Representation, Estimation and Testing. Econometrica, 55: 251-276.

Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross-Spectral Methods. *Econometrica.*

Hansen, H & Rand, J .(2004). On the causal links between FDI and growth in developing Countries, Development economics research group, University of Copenhagen.

Hermes, N. and Lensink, R. (2003). Foreign Direct Investment, Financial Development and Economic Growth. The Journal of Development Studies, Vol.40.

Hymer, S.H. (1976). The international operations of national firms: a study of direct foreign Investment. Ph.D. MIT. Subsequently published by Cambridge, MA: MIT Press.

Kayonga, G. W. (2008).A Comparative study of foreign direct investment policy in Eastern Africa: The case of Rwanda and Tanzania (2000-2006).

Kendall, M.A. & Stuart, A. (1967). Advanced Theory of Statistics, Vol. 2, 2nd ed., Griffin, London.

King'ang'i, K. (2003). Private investment and Economic growth in Kenya. An empirical Investigation: 1980 -2002.

Li, X & Liu, X.(2005). "Foreign Direct Investment and Economic Growth: An increasingly endogenous relationship." *World Development*. **33**:3:2005.

Manpreet K., Surendra S. Y., Vinayshil G. (2013). A bivariate causality link between foreign Direct investment and economic growth: Evidence from India", Journal of International Trade Law and Policy, Vol. 12 Iss: 1, pp.68 – 79.

Mwilima N. (2003). Foreign direct investment in Africa. Labour resources and research Institute (LaRRI) South Africa.

Nyamwange, M. (2009). Foreign direct investment in Africa. Munich Personal RePEc Archive.

OECD. (2002). Foreign direct investment for development: Maximizing benefit Organization for Economic Co-operation and Development. Paris.

Orden, D. (1986). Identifying Monetary Impacts on Agricultural Prices in VAR models. American journal of Agricultural Economics, 71: 495-502.

Sharma, B. & Gani, A. (2004). The Effects of Foreign Direct Investment on Human Development, Global Economy Journal, 4, 2, Article 9.

Sims, C. 1980. Macroeconomics and reality. *Econometrica* 48(1): 1-48

Stoiana, C. & Filippaiosa, F. (2008), Dunning's ecletic paradigm: A holistic, yet context Specific framework for analyzing the outward FDI: Evidence from international Greek investments, International Business Review, vol.17, Issue 3.

Toda, H. Y and Yamamoto T. (1995). Statistical inferences in vector autoregressions With possibly integrated processes. *Journal of Econometrics*, 66, 225-250

UNCTAD .(2013). http://unctad.org/en/PublicationsLibrary/wir2013_en.pdf .Retrieved on April 27, 2014.

UNCTAD .(2007). World Investment Report 2007. Transnational Corporations, Extractive Industries and Development. New York and Geneva: United Nations.

Vernon, R. (1966). International Investment and International Trade in the Product Cycle. Quarterly Journal of Economics. Cambridge.

Wanjala .(2001). Determinants of foreign direct investment in Sub-Saharan Africa, with inferences on Kenya.

White, H. (1980). A Heteroscedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity, Econometrica 48, 817—38.

World Bank. (1996). World Debt Tables: External Finance for Developing Countries, Vol. 1 (Analysis and Summary Tables). Washington, D.C.: The World Bank.

Zhang, K. H. (2006). The Role of FDI in China's Export Performance. In China as the World Factory. Kevin Honglin Zhang, Eds. New York: Routledge.

APPENDICES

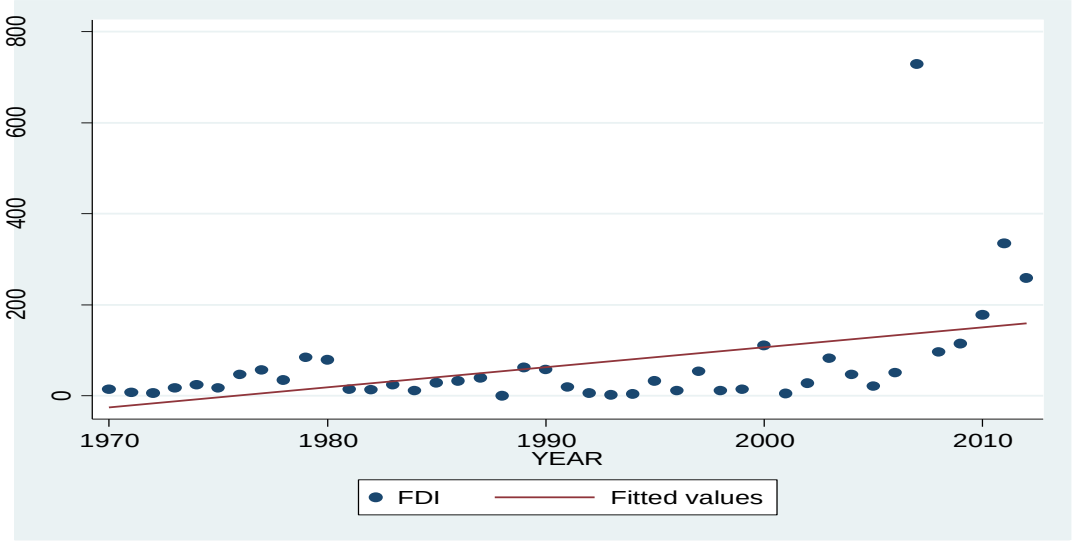
BASIC DATA

Appendix i

YEAR	FDI $ millions	GDP GROWTH (%)
1970	13.80	-4.66
1971	7.40	22.17
1972	6.30	17.08
1973	17.26	5.90
1974	23.42	4.07
1975	17.16	0.88
1976	46.37	2.15
1977	56.55	9.45
1978	34.41	6.91
1979	84.01	7.62
1980	78.97	5.59
1981	14.15	3.77
1982	13.00	1.51
1983	23.74	1.31
1984	10.75	1.76
1985	28.85	4.30
1986	32.73	7.18
1987	39.38	5.94
1988	0.39	6.20
1989	62.19	4.69
1990	57.10	4.19
1991	18.80	1.44
1992	6.00	-0.80
1993	2.00	0.35
1994	4.30	2.63
1995	33.00	4.41
1996	10.55	4.15
1997	53.00	0.47
1998	11.41	3.29
1999	13.82	2.31
2000	110.90	0.60
2001	5.30	3.78
2002	27.62	0.55
2003	81.74	2.93
2004	46.06	5.10
2005	21.21	5.91
2006	50.67	6.33
2007	729.05	6.99
2008	95.58	1.53
2009	114.97	2.74
2010	178.06	5.76
2011	335.25	4.38
2012	258.61	4.60

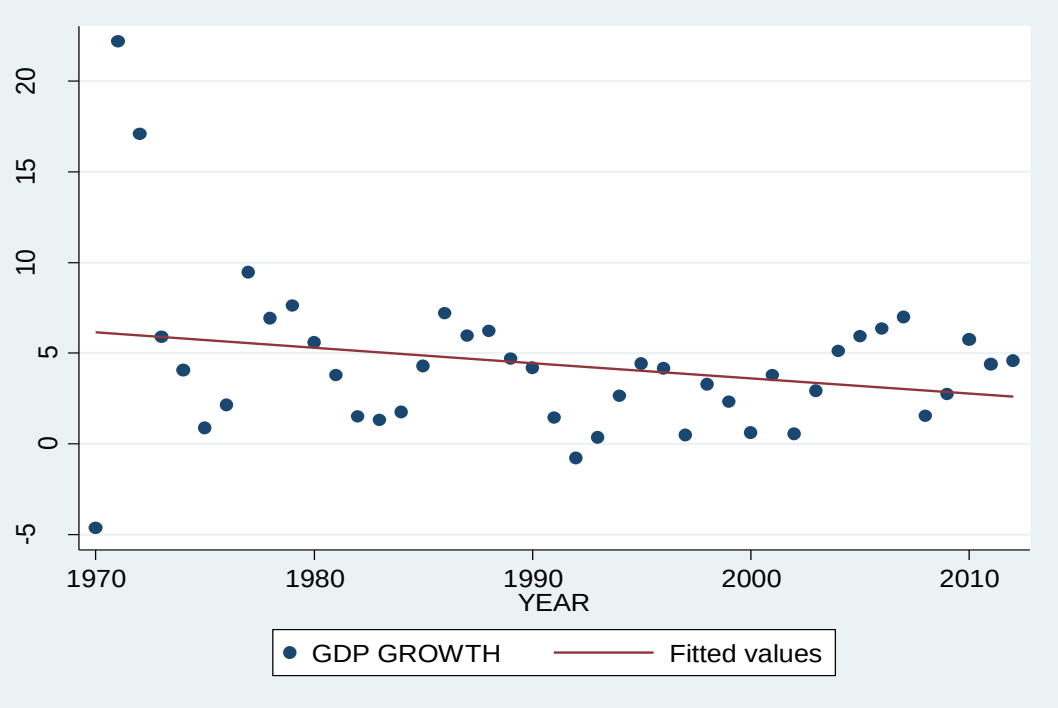
SCATTER GRAPH FOR FDI

FIGURE 5



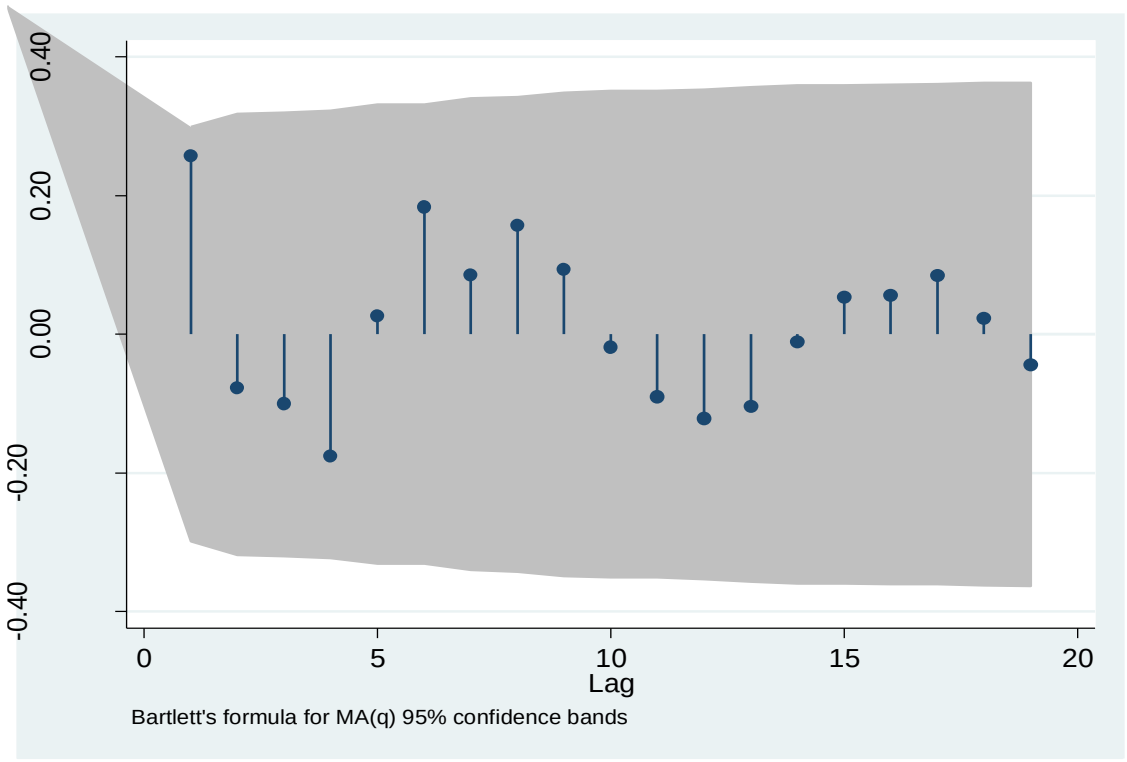
SCATTER FOR GDPGROWTH

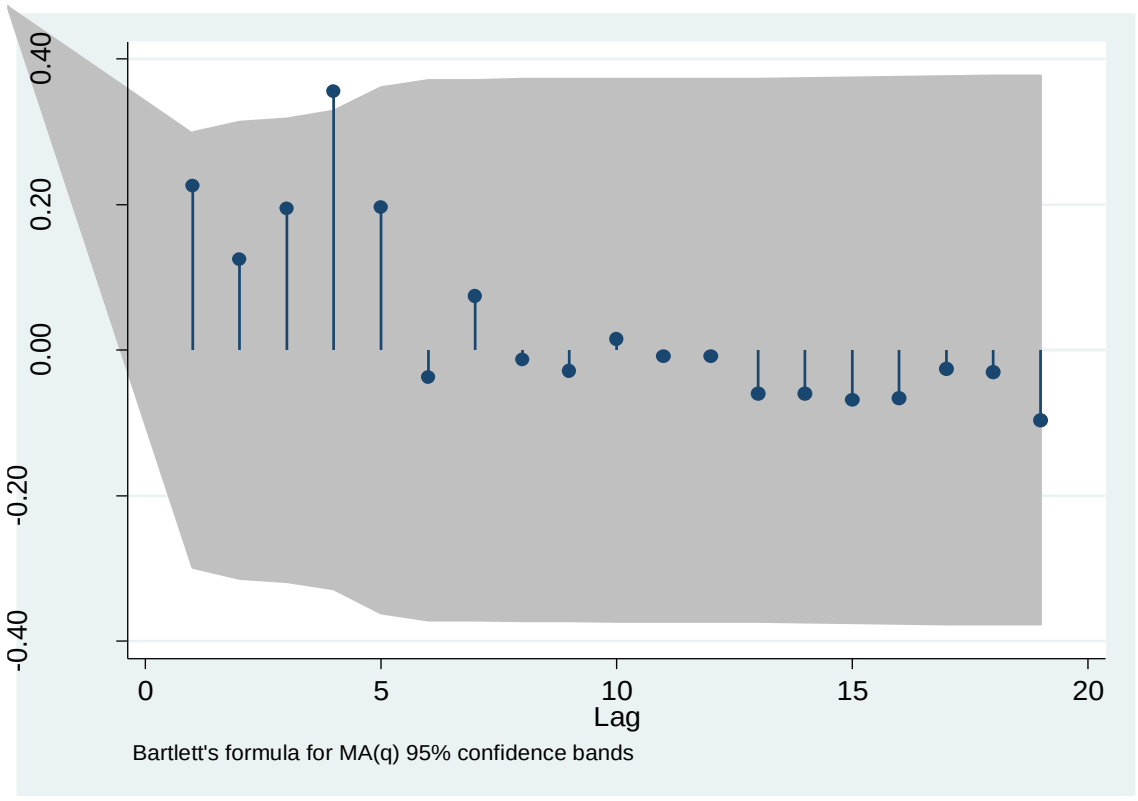
FIGURE 6



CORRELOGRAMS PLOTS

FIGURE 7





VECTOR AUTOREGRESSION RESULTS

TABLE 16

Vector autoregression

Sample: 1971 - 2012		No. of obs	= 42
Log likelihood = -377.3647		AIC	= 18.25546
FPE	= 290743.7	HQIC	= 18.34645
Det(Sigma_ml)	= 218380.8	SBIC	= 18.5037

Equation	Parms	RMSE	R-sq	chi2	P>chi2
fdimilions	3	123.613	0.0573	2.55352	0.2789
gdpgrowth	3	4.08071	0.0876	4.030655	0.1333

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
fdimilions						
fdimilions						
L1.	.236029	.1545392	1.53	0.127	-.0668622	.5389201
gdpgrowth						
L1.	1.504666	4.236364	0.36	0.722	-6.798456	9.807787
_cons	46.88445	27.2831	1.72	0.086	-6.589445	100.3584
gdpgrowth						
fdimilions						
L1.	-.0040585	.0051016	-0.80	0.426	-.0140576	.0059405
gdpgrowth						
L1.	.2653405	.1398506	1.90	0.058	-.0087616	.5394427
_cons	3.671951	.9006681	4.08	0.000	1.906674	5.437228

TIME PLAN SCHEDULE (2014)

Appendix ii

TIME PLAN SCHEDULE (2014)											
ACTIVITY	Jan	Feb.	march	April	may	June	July	Aug	Sept	Oct	Nov
PROBLEM IDENTIFICATION											
TOPIC IDENTIFICATION											
DRAFTING AND WRITING OF PROPOSAL											
PROPOSAL DEFENSE											
CORRECTIONS ON DEFENCE											
DATA COLLECTION											
DATA ANALYSIS											
DEFENCE OF DISSERTATION											
CORRECTIONS ON DEFENCE											
SUBMISSION TO GRADUATE SCHOOL											

BUDGET

DESCRIPTION	AMOUNT (KES)
Ink for printer	5,000.00
Printing papers	4,500.00
Printing Cost	3,500.00
Telephone costs	1,500.00
Internet Services	2,000.00
Data collection	3,000.00
Data analysis and research software installation	12,000.00
Other costs associated with research	5,000.00
	36,500.00