EFFECT OF PUBLIC DEBT ON FOREIGN DIRECT INVESTMENT INFLOWS IN KENYA

BY

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

OCTOBER, 2018

DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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ACKNOWLEDGEMENT

I take this opportunity to acknowledge that this is all but the doing of the Lord, He has been my guide in my career, my source of inspiration and am grateful that He has brought me to the successful completion of this project.

I would also like to express my deepest gratitude to my supervisor Dr. Mirie Mwangi for his supervision and scholarly advice, systematic guidance, open door policy and unreserved efforts all through to the accomplishment of successful completion of this research project.

My deep and sincere appreciation goes my family, friends & colleagues for this tremendous, invaluable support during my entire study period of this program. To my friends, finishing this project would have been impossible if it were not for your constant impetus in concluding this project

Indeed this research project would not have been possible without the support of many people.

DEDICATION

I dedicate this research project to my family and specifically My Husband Simon Munene for his support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course

I also wish to express my dedication on this piece of work to my late father (Wilson Waweru -Wiz) and my Mum (Elizabeth Wanjiku) who valued the importance of education and made a lot of sacrifices and effort in nurturing me and my siblings so that we may have a better life.

God Bless you abundantly

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LIST OF ABBREVIATIONS

AfDB	African Development Bank
CBK	Central Bank of Kenya
EEC	European Economic Community
EIB	European Investment Bank
FDI	Foreign Direct Investments
GDP	Gross Domestic Product
GOK	Government of Kenya
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
KES	Kenya Shilling
SPSS	Statistical Package for Social Sciences
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar

ABSTRACT

The biggest challenge facing LDCs to attain sustained and equitable economic growth and development is inadequate domestic financial resources. This has led to heavy reliance by most LDCs on external capitals such as foreign direct investment, concessional lending and remittances and foreign aid. Huge dependence on foreign capital has however exposed the country to high levels of external debt. Despite the fact that 60% of the LDCs have either benefited or are working towards benefiting from the debt relief under the Heavily Indebted Poor Countries (HIPCs) initiative and Multilateral Debt Relief Initiative (MDRI) and other bilateral donors, they are still struggling with high debt burdens. Kenya is facing the same predicament with accumulation of public debt and shrinking foreign aid especially from the 90s after the freezing of donor aid. This study sought to determine the effect of public debt on foreign direct investments inflows in Kenya. The independent variable was public debt as measured by quarterly public debt in natural logarithm form. The control variables were interest rates as measured by central bank lending rate on a quarterly basis, economic growth as measured by quarterly GDP, exchange rates as measured by quarterly exchange rate between ksh and usd and inflation rates as measured by quarterly CPI. FDI inflows in Kenya were the dependent variable which the study sought to explain and it was measured by FDI inflows in the country on a quarterly basis. Secondary data was collected for a period of 10 years (January 2008 to December 2017) on a quarterly basis. The study employed a descriptive research design and a multiple linear regression model was used to analyze the relationship between the variables. Statistical package for social sciences version 21 was used for data analysis purposes. The results of the study produced R-square value of 0.673 which means that about 67.3 percent of the variation in FDI inflows in Kenya can be explained by the four selected independent variables while 32.7 percent in the variation was associated with other factors not covered in this research. The study also found that the independent variables had a strong correlation with FDI inflows (R=0.820). ANOVA results show that the F statistic was significant at 5% level with an F statistic of 13.976. Therefore the model was fit to explain FDI inflows in Kenya. The results further revealed that individually, public debt, interest rates, economic growth, exchange rates and inflation rates are not significant determiners of FDI inflows in Kenya. This study recommends that there is need for policy makers to regulate public debt levels prevailing in the country bearing in mind that they can influence FDI inflows in the country.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Despite the fact that debt avails massive resources an economy, it accumulates over time thus attracting a lot of interest liability. If these borrowings are not well managed, they will bring negative repercussions to the economy since more resources will be used for debt repayment as opposed to other vital government projects (Abbas & Christensen, 2007). According to economic theory, public debt is good for a nation's economic growth and Foreign Direct Investment (FDI) inflows. However, this is only possible up to a certain level beyond which its effects are adverse to an economy. The theory of debt overhang as explained by Krugman (1988) clearly demonstrates how accumulation of high public debt leads to low FDI inflows translating into low economic growth of a country. The theory suggests that foreign investors will be discouraged from investing in a country that has a huge debt since part of their proceeds would be used to service the debt through high taxation. The theory postulates that reducing debt obligation, on the other hand, results to a rise in both domestic and foreign direct investment thus minimizing the chances of debt default.

This study will be guided by several theories such as the debt overhang theory, Keynesian theory of public debt and the crowding out effect theory that have tried to explain the relationships between public debt and foreign direct investment inflows. Debt overhang theory is anchored on the notion that in case a debt exceeds the repayment capacity of the country, the expected debt service is likely to exceed the country's output level which will negatively affect foreign direct investment inflows

in the economy. Keynesian theory of public debt opines that increase in public debt increases the national income and in effect foreign direct investment. Keynes urged government to borrow for all reasons so as to increase employment and output. Crowding out effect is brought about clearly by the presence of deficit in the fiscal policy by governments which results in a reduction in the investment spending, an increase on the interest rate and a weakening of the stimulus of the fiscal policy.

Foreign direct investment inflows to Kenya fluctuated from 1990 to 2008 and then started to increase until 2014. This implies that multinationals and their subsidiaries have continued to increase goods and services production in Kenya. Most developing economies for instance Kenya has interest in FDI to be a source of capital for industrialization. This is due to the fact that foreign direct investment presents a long term commitment by the foreign investor to host country. In addition foreign direct leverage has significant contribution to a host country's fixed capital formation (Abala, 2014). In Kenya, fixed capital formation stands at 21 % of GDP of which 7% is contributed by FDI (World Bank, 2017). Since 2013, the public debt has been on the rise leading to a higher public debt to GDP ratio with the current total debt of 2.447 trillion being the highest ever recorded in the country (CBK, 2018).

1.1.1 Public Debt

Public debt is the total amount that the government owes to its creditors (Akram, 2010). Public debt can either be internal or external debt. External debt is the one owed to external creditors like multilateral creditors, bilateral creditors and private institutions such as the Standard Bank UK. Bilateral creditors are mainly countries such as Germany, Japan, France, Italy, USA, Netherlands, Denmark, Finland, China and Belgium. Multilateral creditors include International Development Association

(IDA), International Fund for Agricultural Development (IFAD), European Economic Community (EEC), World Bank, International Monetary Fund (IMF), European Investment Bank (EIB) and The African Development Bank (AfDB). Domestic debt is owed to holders of government securities such as from Treasury bills, Treasury bonds, and non-interest bearing stock (UNCTAD, 2017).

Domestic debt is an instrument for implementing monetary policy (Ariyo, 1997). The Central Bank through open market operations buys and sells public securities to control market liquidity and stabilize the domestic currency. Debt instruments also play a huge role in the development of financial markets. Government debt provides a standard by which the private sector issues private securities such as corporate bonds. Corporates usually issue their securities after considering the prevailing interest rates on government securities such as treasury bonds. The government builds investor confidence by issuing debt instruments that have a secure return (Klein, 2010).

One way to measure debt is by comparing it to the economy's production or gross domestic product. Measuring debt in absolute terms ignores the wealth and productivity of a country. A wealthy, highly productive country is much better placed to encounter and carry a large public debt than a poor country. Thus, a better measure of public debt is relative to a nation's GDP instead of absolute terms, (Matiti, 2013). Debt-GDP ratio allows for useful comparisons across countries over time with regards to a government's ability to service its debts and manage its fiscal situation in general. Faster GDP growth relative to the growth of debt helps countries to keep the debt-GDP ratio under control. Low economic growth, on the other hand, causes an increased debt-GDP ratio. The current study will apply debt to GDP ratio to indicate the measure of public debt.

1.1.2 Foreign Direct Investment Inflows

Hill (2005) defined FDI as the long lasting investments which are outside the investor's physical or economic boundaries. The beneficiary country of FDI is equipped with capital flow as well as technology flow that will aid in its development. When a country seeks to invest in another, the benefit it seeks to achieve must be higher than the risks it must deal with. UNCTAD (2017) describes three different types of FDI. These are: reinvested earnings, equity capital and other capital which mainly consist of intercompany loans. FDIs create new job opportunities as upon setting of the business, recruitment and training of the locals in the host country is undertaken transferring skills and technological know-how as well as providing jobs. According to Ryan (2006), FDI represent long term commitments to the host country. It is a preferred form of investment because it has no obligations to the host country.

FDI is important in adopting new technologies, skills and managerial capabilities in the different sectors of the economy which are traditionally difficult to raise through use of domestic savings, and if not, there would be difficulty in importation of the technology from abroad. This would be compounded by the fact that transferring technology to firms with little experience is risky and they will find difficulty in the use of it and it comes at a great cost (Olson, 2008). FDI is responsible for many externalities that come in the form of benefits to the home country that are not responsible for generating incomes to the host country. FDI is important for developing countries as it avails resources necessary to optimize the level of economic development (Ismaila & Imoughele, 2010). The reason for this is that their economies face challenges such as low domestic savings, revenues, low levels of productivity and low foreign exchange earnings.

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).

1.1.3 Public Debt and Foreign Direct Investment Inflows

According to economic theory, public debt is good for a country's economic growth. However, this is only possible up to a certain level beyond which its effects are adverse to an economy. The theory of debt overhang as explained by Krugman (1988) clearly demonstrates how accumulation of high public debt leads to low FDI inflows translating into low economic growth of a country. According to Krugman (1988), debt overhang refers to a situation where the existing external debt is very large. The theory suggests that foreign investors will be discouraged from investing in a country that has a large external debt since part of their proceeds would be used to service the debt through high taxation. On the other hand, the theory postulates that reducing debt obligation results to a rise in both domestic and FDI thus minimizing the chances of debt default.

Ostadi and Ashja (2014) shows that external debts have a notable negative impact on FDIs , and that a rise in foreign debt affects the vision of the foreign investor and creates negative perception about the future economy which lead to a decline in the country's level of investment. The outcome further indicated that the size of the government contributes to slow foreign investment which is in line with crowding out effects and shows that the presence of government reduces the presence of private sector. Wamboye (2012) studied external debt, trade and FDI on economic growth for growing economies. Based on the results, a conclusion was drawn that high external debt deters FDI and economic growth, despite the type of debt.

According to Schnitzer (2000), the sovereign risks linked with debt financing have proven to have lesser repercussions than those associated with FDI. Therefore, FDI is viable if the investor is highly efficient in managing the project in question, if the foreign investor has a better deal outside and if the project is risky (Ribeiro, Vaicekauskas & Lakstutiene, 2012). Therefore they find a positive association between FDI and public debt. Udomkerdmongkol, Gorg and Morrissey (2013) conducted an empirical investigation on FDI, domestic investment and external debt. The findings revealed that foreign debt financing do not affect investment. No evidence however exists on domestic investment and external debt financing in the two regimes.

1.1.4 Public Debt and Foreign Direct Investment Inflows in Kenya

The measure of public debt has been persistently ascending with the budget achieving an incredible 3.1 trillion in the 2018/2019 budget while the assessed national revenue remained at 1.7 trillion which is only somewhat over a large portion of the aggregate use (CBK, 2018). Borrowing is one of the roads through which Treasury can fund a

shortage. The debt levels are set to run considerably higher with The National Assembly favoring the raising of the external debt ceiling from 1.2 to 2.5 trillion. The money is for funding the second phase of standard gauge railway, build roads and fund the big four agenda comprising of food security, health, housing and manufacturing (Were, 2018).

In Kenya many people have not only blamed retarded economic growth due to poor governance and corruption but also increasing public debt. Increasing public debt has serious macroeconomic problems which can lead to poor social and economic status of a country (Government of Kenya, 2012). From statistics, it is evident that public debt ratio to GDP and public debt service ratio to GDP have been fluctuating since 1980. However, the highest public debt ratio (131.90) was recorded in year 1993 while the lowest (21.24) was recorded in the year 2008. On the other hand, the highest public debt service ratio to GDP (12.33) was recorded in the year 1994 while the lowest (1.00) was recorded in the year 2010.

In 2008, Kenya launched vision 2030 with the objective of among other things to achieve global competitiveness for FDI and gain economic prosperity. Since 1970-1980, inconsistent FDI inflows have been experienced in Kenya. Kenya was chosen by the multinational companies as their regional hub due to good infrastructure, openness to FDI, market size and at a period when other nations in the region had relatively closed regimes all impacted on the multinational companies (MNCs) selecting Kenya as their hub for the region. Net FDI were highly volatile and generally declining in the 1980s and 1990s besides the economic reforms and the advancements made in business environment (Mwega & Ngugi, 2004). In the 1980s and 1990s, FDI inflow was low due to deterioration in economic performance as well

as rising problems of poor infrastructure and the high cost of living greatly impacted negatively on FDI inflows in Kenya (KPMG, 2012). In total, Kenya has more than 200 multinational companies across the sectors with Britain, USA, South Africa, Germany, Switzerland, Netherlands, India and China being the main traditional sources of FDI (Kinuthia, 2010).

Kenya serves as the East African business hub for many international businesses. This translates to a dependence of FDI for capital inflow that in turn reflects on provision of jobs and an economy that is helped to grow by these foreign investments. Kenya's FDI average percentage growth between 2007 and 2016 was forty percent (40%) with the inflows primarily channeled into retail and consumer products, technology, media, telecommunications, minerals, oil and natural gas sector mainly from the UK,USA and India (Ernest & Young,2015). In 2016, FDI inflows stood at USD 1076.9 million (KES 105.29 billion), up from USD 670 million (KES 65.51 billion) a year earlier which is a sixty per cent (60%) increase. This capital mainly went to oil, gas and the manufacturing industries (UNCTAD, 2016).

1.2 Research Problem

The determinants of foreign direct investments have become a vital topic not only for the policy makers and government but also for academic research (Mahiti, 2012). Both theory and empirical literatures hold that a country's growth has a direct link with the economy, which is made of many variables such as the GDP, remittances, public debt, FDI, interest rate, inflation, exchange rate, money supply, and many others. These variables are the backbone of any economy (Mitullah, 2010). Foreign direct investment inflows movements into a country are influenced by changes in many economic variables and these fundamentals' future prospects changes.

Countries need to seek new ways of attracting FDI stock since motives of investors are varying over. Research is therefore crucial for investment decision making and predictability of FDI inward stock is imperative.

Kenya's public debt stands at 53 percent of GDP (Government of Kenya, 2016). Many scholars have shown interest in studying the effects the public debt has on the economic development of the developing economies. Those in support of external debt argue that governments that rely on external debts are capable of eradicating bottlenecks in their economies thus making full use of their resources. Maximum utilization of the resources has a direct link to economic growth. Those against external debt argue that such actions by developing countries' economies are likely to hamper economic growth through its negative effect on economic growth handles (Tchereni et al., 2013).

Empirical evidence is largely inconsistent and quite varied on the main factors determination of FDI inflows in a nation. Mottaleb and Kalirajan (2010) established that nations with larger Gross Domestic Product with higher rates of growth, higher proportion of international trade and a more business-friendly environment are more effective in alluring foreign investors. Asiedu (2002) found that infrastructure, openness to trade and high returns on investments are key factors that promote international oil companies (IOC's) investment decisions. Babatunde (2012), in a study on the influence of tax incentives on FDI in Nigerian gas and oil industry, found that there is an important effect of tax enticement, natural resources accessibility and openness to trade on foreign direct investment. Mahiti (2012) investigated the factors that determine international corporate investments and found that infrastructure

mainly in the transport sector plays a major role in attracting more Foreign Direct Investments.

Locally, existing studies have either considered public debt or FDI separately. Kibui (2009) studied the effect of external debt on public investment and Kenya's economic growth (1970-2007). The results indicate that debt relief could act as a catalyst for investment recovery and economic growth in Kenya. Harmon (2012) examined the effect of public debt on GDP growth, rates of interest and inflation in Kenya. From the findings, it was concluded that a single analysis could not be used to establish the association between inflation, public debt, Interest rates and GDP growth. Gikandu (2012) examined the association between domestic debt and Kenya's economic growth. From the analysis, a weak positive association was found between the two variables. This implies that domestic debt slightly contributes to economic growth. Matiti (2013) examined the impact of selected public debt determinants in Kenya and established a direct relationship between foreign exchange rates depreciation and public debts. Moki (2012) did an analysis of the association between public debt and economic growth among African countries and established that public debt has a strong positive association on economic growth. From the foregoing, it is clear that many studies have been done on public debt and FDI but most of these studies have not concentrated on the effect of public debt on foreign direct investments in Kenya. This study therefore sought to answer one research question: What is the effect of public debt on foreign direct investment inflows in Kenya??

1.3 Objective of the Study

The objective of this study was to determine the effect of public debt on foreign direct investment inflows in Kenya.

1.4 Value of the Study

The study discoveries will go about as a kind of reference point for future researchers, students as well as scholars looking to carry out studies on the equivalent or a closely related field. The scholars and researchers may likewise find it supportive in the reorganization of related study areas by pointing out topics that require additional research and reviewing of existing empirical literature to distinguish gaps in the study.

The results are hoped to be beneficial to policy makers in developing investment strategy policies and developing the necessary institutional framework required to market Kenya as an ideal foreign investment destination. Also, it will help them in coming up with policies that ensure setting public debt levels that are consistent with the objective of attracting foreign direct investments.

The study may also help the government to have some sense of control on the operations of different stakeholders in the sector. A clear picture of the FDI flows can be painted which may help in doing comparative analysis with other developing countries. Policy makers may use the findings to overcome disadvantages as the study outlines the potential strengths and weaknesses of Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The section outlines the theoretical framework used in the study and reviews former studies on public debt and foreign direct investment inflows. It entails the theoretical review, determinants of foreign direct investments, empirical review, the conceptual framework and the literature summary.

2.2 Theoretical framework

The section presents relevant theories which can be used to explain the association between public debt and FDI. The theoretical reviews covered are; debt overhang theory, the eclectic paradigm theory and internalization theory.

2.2.1 Debt Overhang Theory

According to Krugman (1988), "debt overhang" is a condition where the expected repayment ability of an economy of external debt is below the debt contractual value. Cohen's (1993) theoretical model argues that foreign debt has a non-linear effect on investment as propagated by Clements et al., (2003) who argues that this association could influence growth. Therefore foreign debt accumulation promotes investment up to a certain level where debt overhang starts to create negative implications on the willingness of the investor to inject more capital. Similarly, the growth model of Aschauer (2000), which holds that public capital brings a non-linear effect on economic growth could be used to explain the effects of public debt.

According to Reinhart et al., (2012), public debt overhang is a result of development fiscal crises database over the past few years. Before this database was developed,

public debt significantly influenced economic growth. For instance, Sala-i-Martin and Barro (1995) demonstrated empirically that the government consumption to GDP ratio negatively affects per-capita GDP. No evidence however exists on whether the amount of public debt has a strong effect. However, Fischer (1991) demonstrated empirically that fiscal deficit has negative implications on GDP but failed to confirm whether public debt amount has an impact on per-capita GDP (Kobayashi, 2015). This theory relates to the current study as it recognizes the role of public debt in influencing foreign direct investments in an economy.

2.2.2 Internalization Theory

This theory was advanced by Casson and Buckley in 1976. Further development of the theory was by Hennart (1982) and benefits from addition works by Casson (1983). The theory explains the growth of multinational corporations and their motivations. It demonstrates that multinational corporations organize their internal activities to achieve specific advantage and exploit them to enhance its competitiveness. According to Hymer (1976), FDI will occur if and only if the exploitation of firm specific advantage supersede the relative cost of investing abroad. In summary, he implies that FDI occur in imperfect markets and it's simply a strategy decision at firm level rather than a financial decision of the capital market.

Casson and Buckley (1976) argue that an FDI is only attractive if the Ownership, Location and Internalization (OLI) conditions are met. First, the multinational must have an ownership advantage compared to the local firm's ownership. This may be in form of the multinational's specific organizational or technological knowledge. The government policies' likely on the benefits of investing in a certain host country is also vital. In some cases the host government may pose regulations concerning the

nature of foreign ownership. Such restrictions in effect reduce FDI inward inflows which will be accompanied by technology. Secondly, it must be advantageous for the multinational companies as well as other investors to produce in the host country if they can benefit from some comparative locational advantage. Finally, it should be suitable to execute the activities within the host countries, as opposed to leasing or buying them from other firms. This theory relates to the current study as it explains the motivation of firms to invest in foreign countries. Government policies in the foreign country are one of the key considerations and this may affect FDI inflows.

2.2.3 Eclectic Paradigm Theory

Dunning (1993) came up with this theory which is in itself a mix of three different but correlated theories. These theories are Ownership, Location and Internalization (OLI) which are used to describe how the factors therein contribute to changes in foreign direct investments. Ownership related advantages are those provided by intangible assets. This assets must however be considered as exclusive possessions held and owned by the company and are transferable to other firms at prices that would lead to reduction of costs to the company, or would lead to the company registering high rates of return. In his arguments, Dunning (2005) argues that when all other factors are held constant, a company with a higher level of competitive advantages, in comparison with its competitors, has a higher chance in increasing its overall production and hence increasing its global presence.

Location benefits, as explained by Denisia (2010) are used to compare the different economies, as per their strengths and opportunity. The end result of this analysis is that the most suitable country is selected to be a host country for the activities of multinational firms. The correlation existing between location and ownership

advantages is that when a multinational corporation is able to host itself in the most suitable economy, it is now able to engage in the exploitation of its ownership related abilities, and thus leading to the firm engaging in foreign direct investment.

Internalization establishes a need for the firm to be able to have an established business in each of the economies that the company sells its products or services. The firm must derive ways through which it can benefit further through foreign production as compared to the meager fees that are earned in international trade activities such as exporting and franchising. Dunning (2005) states that a corporation is more likely to get higher returns if, it engages in foreign production as opposed to the extension of its production rights to other countries. The eclectic paradigm is therefore in support of the establishment of production markets by a corporation through exploitation of its competitive advantages and the selection of suitable locations. In doing this, the corporations are not only engaging in foreign direct investments but also gaining much more than their competitors. If this theory was to apply, then public debt would have an influence on FDI inflows as foreign firms would consider this in their selection of where to invest.

2.3 Determinants of Foreign Direct Investment Inflows

FDI involves real assets and this ensures that an investor will be active in managing the assets he is acquiring. A number of issues exist which cause the attractiveness of a make one country to be more than the other and these factors can also vary from one period to another. These determinants have contributed to studies on why some given countries are more prosperous than others nations in attracting FDI. Quite many researches have been carried out on the determinant factors of FDI but so far there is yet to be a definite consensus. The different approaches to the determinants of FDI do

not cancel each other out but expound on various issues of a similar phenomenon (Kinuthia, 2010).

2.3.1 Public Debt

Debt servicing affects country's economic growth negatively through altering composition of government spending. Higher debt service widens budget deficit thus reducing public investment (Clements & Nguyen, 2003). The decrease in government spending may be an impediment to foreign direct investment. For instance, infrastructural and labor-oriented investors may be discouraged to consider a country which has low investment in the two areas.

Ostadi and Ashja (2014) show that debts have a notable negative impact on FDI and that a rise foreign debt has damaged the vision of the investor and resulted in negative future economic expectations which have reduced the country's investment. The findings further indicated that the government size significantly reduces FDI which reduces is in line with crowding out effects and shows that the presence of government reduces the presence of private sector.

2.3.2 Inflation

In order to manage the macroeconomic environment and fiscal governance, inflation is very key. It is determined by shifts in the consumer price index which is a weighted average price of consumed goods and services (Nwankwo, 2006). Tensions in the economic environment of a nation occurs when the inflation level is high and it depicts the government's reluctance to have a stable monetary policy. It can be argued that risk averse foreign investors coupled with high levels of inflation will cause decreases in FDI in the hosting nation since investors are not willing to risk the profits that they expect from their investments (Kadongo, 2011).

Given high uncertainty levels, investors are bound to demand high price levels in order to offset their exposure to inflationary risks which are bound to lower the volume of investment. Thus, as a move to encourage investments, inflation rate stability is paramount (Gastanaga et al., 1998). Nwankwo (2006) has stressed macroeconomic policy failures as deflecting FDI flows from Africa; he points that, poor monetary and fiscal policies cause unsustainable deficits in budgets and increase inflationary pressures thereby raising the production costs in the local country and thus creating instability in exchange rates and thereby the region becomes a risky destination for FDI (Onyeiwu & Shrestha, 2004).

2.3.3 Interest Rates

According to Agiomirgianakis (2003), FDI is capita that flows into a country due to investments by multinational companies. The economic theory which elaborates on ways that capital moves in the globalized economy insist that capital flows into nations that have a higher investment return as compared to those with higher rates of interest (Pholphirul, 2002). Consequently, investment is higher in Nations that give better investment returns and security in the form of lower rates of interest and a better business environment. Capital therefore tends to move from countries with low rate return to those with high rate of return.

Singania (2011) argues that interest rates are accordingly adjusted to show inflationary changes. As a result, interest rates are critical determinants of foreign direct investment. Traditionally, investors will shop for low cost credit sources or lower rates of interest and invest it in economies that promise higher returns. According to Vesarach (2014), who conducted a study on the role of interest rates in attracting FDI in the Asian economies; the results showed that the determinants of

FDI are interest rates, inflation, GDP, exchange rates, labor cost, money growth and political rights. The researcher concluded that countries should offer competitive interest rates to attract foreign direct investments in their country.

2.3.4 Exchange Rates

Exchange rate is an essential component affecting FDI. Asiedu (2002) stated that different currency areas were responsible for the generation of FDI. Dunning stated that greater fixed capital stakes of an investment showed the possibility of taking into account future movements in exchange rates (Dunning, 1993). Goldberg (2011) agrees that exchange rates volatility impact location decisions of MNCs. Other research indicates that exchange rate risk contributes significantly in explaining FDI (Gastanaga et al., 1998).

Exchange rate volatility may negatively affect and reduce direct investment. Gastanaga et al., (1998) based on an analysis of macroeconomic factors, institutional and legal frameworks and risk in determining FDI, proved that market size, fiscal deficit, inflation and exchange regime and trade openness were all significant. According to earlier research, exchange rate movements have shown to be relevant and significant to FDI because exchange rate volatility contributes directly to uncertainty in the transaction plan from the countries investing (Behera, 2008).

2.3.5 Economic Growth

Many scholars have been attracted to the issue on the role played by economic development in attracting foreign direct investment. According to Charkrabarti (2001) better improved opportunities for gaining profits are attributed to by a rapidly growing economy as compared to those that are growing slowly or not increasing at all. Mishkin and Eakins (2009) find a high outcome of growth on FDI, while Gastanaga et

al., (1998) gains a stiff back up for the hypothesis between 1983 and 1986, but only a weak link between 1975 and 1978.

Basing on the same guidelines, Aoki (2007) established that for the less developed countries, there is a weak positive relationship and a weak negative relationship for the developed countries. Asiedu (2002) asserted that lagged growth for the full sample and non-Sub-Saharan countries in Africa are affected positively, whereas there the Sub-Saharan Africa sample has an insignificant impact. Gastanaga et al., (1998) found significant positive effects of growth on FDI.

2.3.6 Availability of Good Infrastructure

Productivity of investment is increased by good infrastructure which increases FDI flows (Asiedu, 2002). According to Wheeler and Mody (1992) infrastructure is very crucial for developing countries. It is not only made up of roads alone but also telecommunications. In order to enhance communication between the host and home countries, there is need for availability and efficiency of telephones. Not only is physical infrastructure crucial to FDI inflow, but also financial infrastructure. In order to tap the full importance of an FDI inflow, there is need for a well-developed financial and infrastructural system.

2.3.7 Country Risk

In nations that are developing, FDI is negatively influenced by economic and political uncertainty as per several studies. It is negatively affected by political and economic instability as per the data sources. In a study on foreign owned firms in Africa, political and macroeconomic stability is of great concern as per a study conducted by Sachs and Sievers (1998) based on African foreign owned firms. According to

Lehman (1999) and Jaspersen et al., (2000), less risky nations tend to attract more FDI and is hindered by high perception of risk in Africa.

2.4 Empirical Review

Many empirical studies both locally and internationally support the association between public debt and foreign direct investments, but these studies have produced mixed results.

2.4.1 Global Studies

Ali and Mustafa (2010) analyzed short and long run effects of public debt on economic growth in Pakistan for the period 1970-2010. They made use of extended production function by measuring GNP as a function of annual education expenditure (proxy of human capital), external debt and capital labour force as a percentage of GNP. They applied co-integration analysis to capture the long run effects of debt on GDP. Their findings revealed that external debt has a strong impact in both the short run and long run while labour force negatively affects GNP in both long and short run. The increase in capital formation also have positive effect on GNP in the long run and short run though the positive impact of capital is more than that of human capital. This theory was carried out in a different context and its findings may not be applicable in the Kenyan context.

Azam and Ullah (2011) investigated on the influence of public debt on FDI in Pakistan. The result showed that FDI is negatively influenced by the poor debt condition of the country and signifies relatively unfavorable conditions for foreign investment. Their study also concluded that based on the benefits of foreign investment, the government requires to adopt these policies to attract foreign private investment and reduce external debt through proper debt management policy as the

growth of FDI inflows is affected by a rise in public debt. This theory was carried out in a different context and its findings may not be applicable in the Kenyan context.

Okafor (2012) studied on the value of domestic macroeconomic variables matter for FDI inflow in Nigeria. Prediction that foreign capital flows could boost economic growth of nations is the major finding of the study. The study used ordinary least square method as an estimation technique. Foreign direct investment in Nigeria is majorly determined by real GDP, real exchange rate and rate of interest as per the findings. FDI inflow is majorly determined by domestic macroeconomic variables. Tis study however did not focus on public debt as one of the variables that have an effect on FDI inflows.

Udomkerdmongkol, Gorg and Morrissey (2013) conducted an empirical investigation on FDI, external debt and domestic investment. The study utilized the model of Marini and Dalmazzo (2000) to come up with predictions on the significance of three different sources of financing: FDI financing, foreign debt financing and domestic capital self-financing, for domestic investment for the two types of political regimes: politically stable and politically unstable. Based on fixed-effects estimation, the estimation results excluding any political factors gave positive effects of FDI financing and domestic capital self-financing on domestic investment. No evidence exists on the association between external debt financing and domestic investment in both regimes. The findings show that foreign debt financing have no impact on investment. This theory was carried out in a different context and its findings may not be applicable in the Kenyan context.

Omweri (2013) studied the determinant factors of FDI stock in the five countries of the East African Community i.e. Uganda, Kenya, Burundi, Tanzania and Rwanda to

find out why the region was recording very low increase of FDI. The research employed panel data analysis methods. The study used trade openness, Gross Domestic Product per Capita, Gross Domestic Product growth, telephone line (per 100 people); a proxy for infrastructural facilities, inflation, return on investment and natural resource endowment as independent variables and the stock of FDI as the dependent variable. Analyzed data was between 1991 and 2012. The study's findings showed that trade openness, inflation, and infrastructure facilities were the most crucial determinant factors of foreign direct investment to EAC countries. This study however did not take into account public debt as one of the factors that influence FDI inflows.

2.4.2 Local Studies

Kinaro (2006) investigated the determinant factors of foreign direct investment in Kenya. Identifying the key factors that influence FDI decisions was the main objective of the study. In analyzing the various variables included in the model, the researcher used econometric technique. In the examination of the locational factors of FDI inflows to Kenya, it was proposed that human capital, annual inflation, real exchange rate and economy openness are exogenous variables. Johansen co-integration technique was used to establish the co-integration of the series and it was robust. FDI is affected positively in the short run economic openness and human capital as per the findings. Besides both real exchange rate and inflation have negative impacts FDI inflows in long and short run respectively. This study however failed to address public debt as a determiner of FDI inflows and that is the gap the current study seeks to fill.

Nyamwange (2009) conducted a research study to find out determinants of FDI in Kenya. Objective of the research was to determine factors which influence FDI decisions in the Kenyan context. He explored the correlation between FDI and economic development in Kenya. Findings evidenced that FDI in Kenya is affected by level of human capital, stable macroeconomic policies, taxation, and market size. Additionally, there was no statistically significant link between human capital and GDP which means that there is shortage of skilled employees in Kenya. This study focused on different concepts as it did not take into account public debt and this is the gap the current study will leverage on.

Matiti (2013) examined the effect of selected determinants on public debt in Kenya. This study used descriptive study design and used secondary data. Annual data was used in the computations. The study covered ten years starting 2003 to the year 2012. The findings established that there was a direct relationship between public debt and rates of exchange, balance of payments and budget deficit while there was an inverse relationship between public debt and total grants. The policy makers need to evaluate the best exchange rate policy for optimal economic development. The study findings further established that debts and exchange rates had been increasing; grants had been decreasing over years, while budget deficits remained high in the country. This study is different from the current study as it focused on public debt as the dependent variable while the current study will have FDI inflows as the dependent variable and public debt as the independent variable.

Muinga (2014) examined external public debt and economic growth in Kenya. The study used data from 1970 to 2010 from World Development Indicators and Kenya National Bureau of Statistics. The GDP was the proxy for economic growth. The

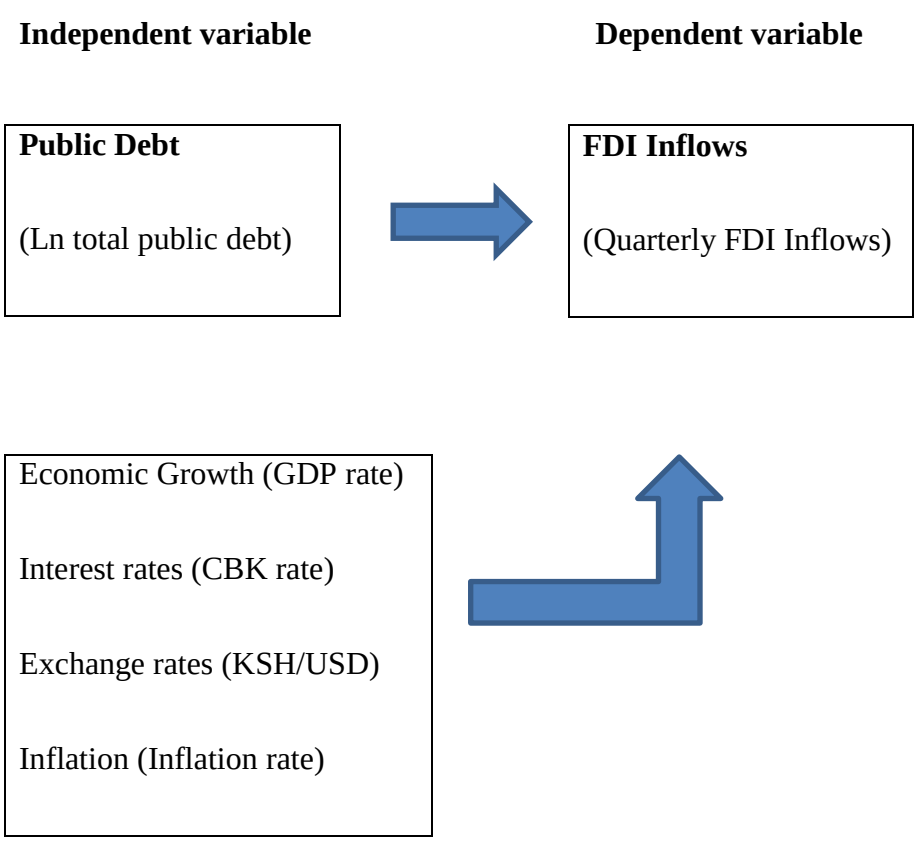
explanatory variables were capital, labour, and interest payments on external debt, external public debt, debt service payments, and inflation. Since the data was in time series the augmented Dickey-Fuller Unit Root test was used to ascertain stationarity. The econometric technique of OLS was employed in the data analysis. The results indicated that external debt and interest payments on external debt payments contribute negatively to Kenya's economic growth. Capital formation and labour force have a significant positive contribution to the growth of the economy. The simulation results showed that any percentage increase of external debt holding other factors constant, will reduce the GDP hence slow economic growth. The current study will be different from this study as it will focus on FDI inflows instead of economic growth.

Kiplagat (2016) conducted a study to determine the impacts of interest rates on FDI. Descriptive research design was employed in the study to establish the association between interest rates and FDI in Kenya. Time series data with regards to the study variables for a time frame of 44 was collected for between the period1971 to 2014. FDI was the dependent variable whereas interest rates, exchange rates, GDP and inflation were used as the independent variables. Only secondary data was collected and the SPSS 17.0 used for analysis. Both inferential and descriptive data analysis methods were used. The study's findings showed a positive correlation between interest rates and FDI. However, the level was not adequate in showing the degree of FDI inflows in Kenya. This study did not investigate the effect of public debt on FDI inflows and this is the gap the current study will leverage on.

2.5 Conceptual Framework

Ostadi and Ashja (2014) shows that public debt have significant negative impact on FDI and a rise in foreign debt has damaged foreign investor's vision and led to negative expectations regarding the future economy that together reduce investment in the nation. The findings further indicated that the government size has an undesirable impact on attracting foreign investment which is in line with crowding out effects and shows that the presence of government reduces the presence of private sector. The current study seeks to investigate whether this findings hold in Kenya.

Figure 2.1: The Conceptual Model



Source: Researcher (2018)

The conceptual model developed portrays this expected relationship between the study variables. The factors characterized here are public debt and FDI inflows. The independent variable is public debt as measured by natural logarithm of total debt in ksh. The control variables are inflation rates as measured by quarterly inflation rate, exchange rates as measured by quarterly exchange rate between Ksh and USD, interest rates as measured by quarterly CBK lending rate and economic growth as measured by quarterly GDP growth rate. Foreign direct investment inflows are the dependent variable that the study is seeking to explain and will be measured by quarterly FDI inflows.

2.6 Summary of the Literature Review

Many theoretical frameworks have attempted to explain the idea of public debt and foreign direct investment inflows. Debt overhang theory, internalization theory and the eclectic paradigm theory are the four theories discussed in this theoretical review. Some of the key determining factors of foreign direct investments have been discussed in this section as well. Many empirical studies have been carried out, globally and locally, on public debt and FDI. This chapter also discusses the results of these studies. The lack of consensus among the various scholars on the impact of public debt on foreign direct investments is reason enough to conduct further examination on the area of study. In addition, much of the studies conducted in the local context have focused on selected macro-economic variables that determine FDI inflows without focusing on public debt. The other studies conducted on public debt have mostly related it to economic growth. The current study intends to fill this research gap by addressing the research question: What is the effect of public debt on foreign direct investment in Kenya

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes research methods applied to objectively determine the influence of public debt on foreign direct investments. It also shows the population of study, research design, data collection and analysis criteria.

3.2 Research Design

Research design is explained as a blue print of the procedures employed by a researcher in establishing the association between dependent and independent variables (Khan, 2008). Descriptive research design was used in this study. A descriptive study entails a description of all the population elements and it gives room for estimation of a part of a population with these attributes.

3.3 Data Specification

The data used for the study was the FDI remittances into Kenya per quarter, total public debt per quarter, average CBK lending rate per quarter, average exchange rate (KSH/USD) per quarter, average inflation rate per quarter and economic growth per quarter for the period between January 2008 and December 2017.

3.4 Data Collection

Data was exclusively collected from a secondary source. The study used secondary data from KNBS publications as well as from the CBK website. The quantitative data collected included total FDI remittances into Kenya from 2008 to 2017 collected on a quarterly basis. Data on rates of interest and rates of exchange was collected from the CBK website on a quarterly basis from 2008 to 2017. Data on public debt, inflation

which was the CPI and economic growth which was the Kenya's GDP, was collected from KNBS from January 2008 to December 2017.

3.5 Diagnostic Tests

Linearity show that two variables X and Y are related by a mathematical equation Y=bX in which b is a constant number. Scatterplot testing or F-statistic in ANOVA was used in obtaining the linearity test. Stationarity test is a process where the statistical properties such as mean, variance and autocorrelation structure do not change with time. Stationarity was obtained 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 was 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 was tested using Durbin-Watson statistic (Khan, 2008).

Homoskedasticity of variance is required for multiple linear regression and it occurs 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 heteroskedasticity. Homoskedasticity 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 heteroskedasticity is unlikely. It can also be shown by white test and ANOVA test (Burns & Burns, 2008).

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This was 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 in case there is a complete linear dependence between them and as it approaches to zero then the multicollinearity becomes more intense. Variance Inflation Factors (VIF) and tolerance levels were also carried out to show the degree of multicollinearity (Burns & Burns, 2008).

3.6 Data Analysis

For easy analysis, the collected data was sorted, classified, coded and then entered in tables. It was analyzed using both the descriptive and the inferential statistics. SPSS computer package version 21 will be used in the analysis since it's more user-friendly. The data was then inputted into the SPSS and examined by use of descriptive, correlation and regression analyses. In descriptive statistics, standard deviation, scatter plot and mean were used. In inferential statistics, the study used multivariate regression analysis to establish the relationship between the dependent variable (foreign direct investments) and independent variables: Public debt, interest rate, growth in the economy, rate of exchange and rate of inflation.

3.6.1 Analytical Model

Using the collected data, the researcher conducted a regression analysis to establish the extent of the relationship between public debt and foreign direct investments. The study applied the following regression model:

$$Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon.$$

Where: Y = Foreign direct investments as measured by natural logarithm of FDI inflows on a quarterly basis

β_0 =y intercept of the regression equation.

β_1, β_2 β_3, β_4 and β_5, = are the slope of the regression

X_1 = Public debt as measured by the natural logarithm of total public debt borrowed on a given quarter

X_2 = Interest rates as measured by average quarterly CBK lending rate

X_3 = Average quarterly exchange rate between USD and Ksh in natural logarithm form

X_4 = Economic growth as measured by quarterly GDP growth rate

X_5 = Average quarterly inflation as measured by inflation rate

ε =error term

3.6.2 Tests of Significance

In the testing of the statistical significance, the F- test and the t – test were applied at 95% confidence level. The F statistic was used to determine a statistical significance of regression equation whereas the t statistic was applied in testing statistical significance of study coefficients.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

The chapter represents the study results and findings in accordance to the research objective. The chapter focused on the analysis of the collected data from CBK and KNBS to establish the effect of public debt on foreign direct investments in Kenya. Using descriptive statistics, correlation and regression analysis, the study results were presented in form of tables for easy interpretation.

4.2 Diagnostic Tests

The researcher carried out diagnostic tests on the collected data. The research assumed a 95 percent confidence interval or 5 percent significance level (both leading to identical conclusions) for the data used. These values helped to verify the truth or the falsity of the data. Thus, the closer to 100 percent the confidence interval (and thus, the closer to 0 percent the significance level), the higher the accuracy of the data used and analyzed is assumed to be. To test for normality, the null hypothesis for the test was that the secondary data was not normal. If the p-value recorded was more than 0.05, the researcher would reject it. The test results are as shown in Table 4.1.

"Both Kolmogorov-Smirnova and Shapiro-Wilk tests recorded o-values greater than 0.05 which implies that the research data was normally distributed and therefore the null hypothesis was rejected. The data was therefore appropriate for use to conduct parametric tests such as Pearson's correlation, regression analysis and analysis of variance".

Table 4.1: Normality Test

FDI Inflows	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Public Debt	.178	40	.300	.881	40	.723
Interest rates	.180	40	.300	.894	40	.790
Economic Growth	.176	40	.300	.892	40	.784
Exchange rates	.181	40	.300	.896	40	.792
Inflation rates	.173	40	.300	.918	40	.822
a. Lilliefors Significance Correction						

Source: Research Findings (2018)

"A test of Multicollinearity was undertaken. Tolerance of the variable and the VIF value were used where values more than 0.2 for Tolerance and values less than 10 for VIF implies that there is no Multicollinearity. There shouldn't be strong relationship among variables for multiple regressions to be applicable. From the findings, the all the variables had a tolerance values >0.2 and VIF values <10 as shown in table 4.1 meaning that there is no Multicollinearity among the independent variables".

Table 4.2: Multicollinearity Test for Tolerance and VIF

	Collinearity Statistics	
Variable	**Tolerance**	**VIF**
Public debt	0.340	1.326
Interest rates	0.360	1.382
Economic growth	0.392	1.463
Exchange rates	0.646	1.434
Inflation	0.398	1.982

Source: Research Findings (2018)

4.4 Descriptive Analysis

Descriptive statistics gives a presentation of the mean, maximum and minimum values of variables applied together with their standard deviations in this study. Table 4.3 below shows the descriptive statistics for the variables applied in the study. An analysis of all the variables was obtained using SPSS software for the period of ten years (2008 to 2017) on a quarterly basis. FDI inflows had a mean of 49.695 with a 36.252 standard deviation. Public debt recorded a mean of 28.622 with a standard deviation of 0.522. Rate of interest had a mean of 15.810 and a 1.955 standard deviation. Economic growth resulted to a mean of 6.215 with a standard deviation of 3.488. Exchange rate resulted to a mean of 1.939 with a 0.055 standard deviation while Inflation had a mean of 8.556 and standard deviation of 3.721.

Table 4.3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FDI inflows (Log)	40	17.480	210.920	49.69500	36.251814
Public debt (Log)	40	27.874	29.585	28.62165	.521503
Interest rate (%)	40	13.653	20.213	15.80990	1.954510
Economic growth (%)	40	.300	12.500	6.21500	3.487895
Exchange rate (log)	40	1.797	2.015	1.93938	.055269
Inflation rate (%)	40	4.030	16.830	8.55850	3.720589
Valid N (listwise)	40				

Source: Research Findings (2018)

4.4 Correlation Analysis

“Pearson correlation was employed to analyze the level of association between FDI inflows and the independent variables for this study (public debt, interest rates, economic growth, foreign exchange rates and inflation rates). From correlation analysis, the study showed the existence of a strong positive and significant correlation between public debt and FDI inflows into the country ($p=.757$, $p<.005$). This goes to show that the level of public debt in a country has a significant association with FDI inflows into the country”.

“The relationship between economic growth and FDI inflows was found to be weak, positive and insignificant ($r=.152$, $p>0.005$). This implies that movement in economic growth is positively correlated to FDI inflows but not in a significant manner. The study also showed that there exist a strong negative correlation between exchange rates and FDI inflows ($r=-.637$, $p<.005$). This shows that rates of exchange have a strong positive association with FDI inflows and the association is significant. Relationship between inflation and FDI inflows was found to be strong and negative ($r=-.798$, $p<0.005$). This implies that movement in the inflation rate is negatively correlated to FDI inflows and in a significant manner”.

The relationship between interest rate and FDI inflows was found to be weak, positive and insignificant ($r=.053$, $p>0.005$). This implies that movement in interest rates is positively correlated to FDI inflows but not in a significant manner. Although the independent variables had an association to each other, the association was not strong to cause Multicollinearity as all the r values were less than 0.70. This implies that there was no Multicollinearity among the independent variables and therefore they can be used as determinants of FDI inflows into the country in regression analysis

Table 4.4: Correlation Analysis

		FDI inflows	Public debt	Interest rate	Economic growth	Exchange rate	Inflation rate
FDI inflows	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	40					
Log Public debt	Pearson Correlation	.757**	1				
	Sig. (2-tailed)	.000					
	N	40	40				
Interest rate	Pearson Correlation	.053	.389*	1			
	Sig. (2-tailed)	.745	.013				
	N	40	40	40			
Economic growth	Pearson Correlation	.152	.032	.367*	1		
	Sig. (2-tailed)	.350	.844	.020			
	N	40	40	40	40		
Exchange rate	Pearson Correlation	-.637**	.931**	.416**	.056	1	
	Sig. (2-tailed)	.000	.000	.008	.730		
	N	40	40	40	40	40	
Inflation rate	Pearson Correlation	-.798**	.950**	.201	-.092	.640**	1
	Sig. (2-tailed)	.000	.000	.214	.571	.000	
	N	40	40	40	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research Findings (2018)

4.5 Regression Analysis

FDI inflows were regressed against five predictor variables; public debt, interest rates, economic growth, exchange rates and inflation rates. The study obtained the model summary statistics as depicted below

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.820[a]	.673	.625	22.212325	1.642

a. Predictors: (Constant), Economic growth, Log Public debt, Interest rate, Exchange rate, Inflation rate

b. Dependent Variable: FDI inflows

Source: Research Findings (2018)

From the outcome in table 4.5 above, the value of R square was 0.673, a discovery that 67.3 percent of the deviations in FDI inflows into the country are caused by changes in public debt, interest rates, economic growth, exchange rates and inflation rates. Other variables not included in the model justify for 32.7 percent of the variations in FDI inflows to the country. Also, the results revealed that there exists a strong relationship among the selected independent variables and FDI inflows as shown by the correlation coefficient (R) equal to .820. A durbin-watson statistic of 1.642 indicated that the variable residuals were not serially correlated since the value was more than 1.5.

From the analysis of variance, "the significance value is 0.000 which is less than p=0.05. This implies that the model was statistically significant in predicting how public debt, interest rates, economic growth, exchange rates and inflation rates affect FDI inflows in the country. Given 5% level of significance, critical value from the table is 2.74, table 4.5 above shows computed F value as 13.976. This is a confirmation that overall the multiple regression model is statistically significant, in

that it is a suitable prediction model for discussing how public debt, interest rates, economic growth, exchange rates and inflation rates affects FDI inflows in the country".

Table 4.6: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34478.396	5	6895.679	13.976	.000[b]
	Residual	16775.171	34	493.387		
	Total	51253.566	39			

a. Dependent Variable: FDI inflows

b. Predictors: (Constant), Economic growth, Public debt, Interest rate, Exchange rate, Inflation rate

Source: Research Findings (2018)

The study applied t-test to determine the significance of individual variables applied in this study as predictors of FDI inflows in the country. The p-value under sig. column was used as an indicator of the significance of the relationship between the dependent and the independent variables. At 95% confidence level, a p-value of less than 0.05 was interpreted as a measure of statistical significance. As such, a p-value above 0.05 indicates a statistically insignificant relationship between the dependent and the independent variables. The results are as shown in table 4.7

Table 4.7: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1311.971	907.786		-1.445	.158
	Public debt	64.055	41.839	.921	1.531	.135
	Interest rate	-3.443	2.499	-.186	-1.378	.177
	Exchange rate	-223.018	193.073	-.340	-1.155	.256
	Inflation rate	-2.327	4.180	-.239	-.557	.581
	Economic growth	.749	1.138	.072	.658	.515

a. Dependent Variable: FDI inflows

Source: Research Findings (2018)

As per the above results, it is evident that none of the five selected independent variables is a significant determiner of FDI inflows as shown by p values greater than 0.05.

4.7 Discussion of Research Findings

"The study sought to determine the effect of public debts on FDI inflows in the country. The independent variable was public debt as measured by total public debt on a quarterly basis. The control variables were interest rates as measured by quarterly CBK lending rate, economic growth as measured by quarterly GDP growth rate, exchange rates as measured by quarterly exchange rate between Ksh and USD and

inflation rates as measured by quarterly CPI. FDI inflow was the dependent variable which the study sought to explain and it was measured by quarterly FDI inflows in Kenya. The effect of each of the independent variables on the dependent variable was analyzed in terms of strength and direction".

"The Pearson correlation coefficients between the variables revealed existence of a strong positive and significant correlation between public debt and FDI inflows into the country. The relationship between economic growth and FDI inflows was found to be weak, positive and insignificant. The study also showed that there exist a strong negative correlation between exchange rates and FDI inflows. The relationship between inflation and FDI inflows was found to be strong and negative. The relationship between interest rate and FDI inflows was found to be weak, positive and insignificant. This implies that movement in interest rates is positively correlated to FDI inflows but not in a significant manner".

The model summary revealed that the independent variables: public debt, interest rates, economic growth, exchange rates and inflation explains 67.3% of changes in the dependent variable as revealed by the value of R^2 which means there are other factors this model doesn't include that account for 32.7% of changes in FDI inflows in Kenya. The model was found to be fit at 95% level of confidence since the F-value of 13.976 is higher than the critical value. This implies that overall the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining FDI inflows in Kenya.

From the model coefficients, the output revealed that none of the five selected independent variables (public debt, interest rates, economic growth, exchange rates and inflation rates) significantly affects foreign direct investment inflows in Kenya as

shown by p values that were more than 0.05. This implies that individually although public debt and economic growth has a positive effect, the effect is not statistically significant. Interest rates, inflation rate and economic growth were found to have negative but statistically insignificant effects on FDI inflows in Kenya.

This study is in agreement with Udomkerdmongkol, Gorg and Morrissey (2013) who conducted an empirical investigation on domestic investment, external debt and FDI. The study utilized the model of Marini and Dalmazzo (2000) to predict the relative importance of three sources of financing: domestic capital self-financing, foreign debt financing and FDI financing, for domestic investment under the two sets of political regimes: politically unstable and politically stable. Based on fixed-effects estimation, the estimation results excluding any political factors are giving positive impact of domestic capital self-financing and FDI financing on domestic investment. No evidence exists on the association between external debt financing and domestic investment in both regimes. The findings show that investment is not affected by foreign debt financing.

The study is also in agreement with Wabwalaba (2017) who sought to determine the effect of public debt on foreign direct investments inflows in Kenya. Secondary data was collected for a duration of 10 years (January 2007-December 2016) on a quarterly basis. The study used a descriptive research design as well as a multiple linear regression model was employed for analyzing the association between the variables. The results of this study revealed that about 27.8 percent of the variation in FDI inflows in Kenya can be explained by the four selected independent variables while 72.2 percent in the variation was associated with other factors not covered in this research. The results further revealed that individually public debt, economic growth,

exchange rates and inflation rates are not significant determiners of FDI inflows in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter shows the summary of research findings, the conclusions made from the results, and the recommendations for policy and practice. The chapter also discusses a few limitations encountered and suggestions for future research.

5.2 Summary of Findings

The study sought to investigate "the effect of public debt on FDI inflows in Kenya. The independent variables for the study were public debt, interest rates, exchange rates, economic growth and inflation. The study adopted a descriptive research design. Secondary data was obtained from CBK and KNBS and was analyzed using SPSS software version 21. The study used quarterly data covering a period of ten years from January 2008 to December 2017".

From the results of correlation analysis, "a weak positive correlation was found to exist between public debt and FDI inflows in Kenya but the correlation was not significant as indicated by a p value of more than 0.05. The relationship between the control variables (exchange rate and inflation) and FDI inflows in Kenya was found to be strong, negative and significant while interest rates had a weak negative but insignificant relationship with FDI inflows in Kenya. Economic growth exhibited a weak positive and insignificant correlation with foreign direct investment inflows as shown by a p value that was more than 0.05".

"The co-efficient of determination R-square value was 0.673 which means that about 67.3 percent of the variation in FDI inflows in Kenya can be explained by the five

selected independent variables while 32.7 percent in the variation of FDI inflows in Kenya is associated with other factors not covered in this research. The study also found that the independent variables had a strong correlation with FDI inflows in Kenya (R=0.820). ANOVA results show that the F statistic was significant at 5% level with a p=13.976. Therefore the model was fit to explain the relationship between the variables selected".

From the model coefficients, the output revealed that none of the five selected independent variables (public debt, interest rates, economic growth, exchange rates and inflation rates) significantly affects foreign direct investment inflows in Kenya as shown by p values that were more than 0.05. This implies that individually although public debt and economic growth has a positive effect, the effect is not statistically significant. Interest rates, inflation rate and economic growth were found to have negative but statistically insignificant effects on FDI inflows in Kenya.

5.3 Conclusion

"Based on the study results, the conclusion given is that FDI inflows in Kenya have a positive association with public debt. The study therefore concludes that higher public debt lead to improved FDI inflows in the country even though not to a significant extent. It was also realized that economic growth is positively related to FDI inflows in the country and therefore a rise in economic growth leads to a rise in inflows of FDI in the nation. The study found that interest rates, inflation rate and exchange rate had a negative correlation with FDI inflows in the country and we can therefore conclude that higher interest rates, inflation rates and exchange rates tend to discourage foreign direct investment inflows in Kenya".

“This study concludes that independent variables selected for the study; public debt, interest rates, economic growth, exchange rates and inflation influence FDI inflows in the country to a significant extent as they account for 67.3 percent of the changes in FDI inflows in the country. The fact that the five independent variables explain 67.3% of changes in FDI inflows in Kenya imply that the variables not included in the model explain 32.7% of changes in FDI inflows in the country. The overall model was found to be significant as explained by the F statistic. It is thus sufficient to draw a conclusion that these variables significantly affect FDI inflows in the country as revealed by the p-value in ANOVA summary”.

This finding concurs with Udomkerdmongkol, Gorg and Morrissey (2013) who conducted an empirical investigation on domestic investment, FDI and external debt. The study utilized the model of Dalmazzo and Marini (2000) to generate predictions on the relative significance of three different sources of financing: domestic capital self-financing, FDI financing and foreign debt financing, for domestic investment under two types of political regimes: politically unstable and politically stable. Based on fixed-effects estimation, the estimation results excluding any political factors are giving positive effects of domestic capital self-financing and FDI financing on domestic investment. There is no proof of a relationship between external debt financing and domestic investment in both regimes. The results suggest that foreign debt financing has no effect on the investment.

5.4 Recommendations

The study established that although there is a positive influence of public debt on FDI inflows in the country, the influence is not statistically significant. This study recommends that there is need for policy makers to regulate the debt levels prevailing

in the country bearing in mind that they influence FDI inflows in the country. Growth in the economy was also found to have a positive influence on FDI inflows and therefore this study recommends that policy makers should develop measures to boost economic growth as it attracts foreign direct investments.

The study found that exchange rates have a negative impact on FDI inflows in the country. This study recommends that policy makers should regulate prevailing exchange rates as depreciation in exchange rates may lead to decreased FDI inflows into the country. Exchange rates and inflation rates were discovered to be having a negative relationship with FDI inflows in the country. The variables were however found to be insignificant determinants of FDI inflows in the country. This study recommends that policy makers should pay attention to the prevailing rates of these selected independent variables as they can negatively affect FDI inflows in the country.

5.5 Limitations of the Study

"The scope of this research was for ten years 2008-2017. It has not been determined if the results would hold for a longer study period. Furthermore it is uncertain whether similar findings would result beyond 2017. A longer study period is more reliable as it will take into account major economic conditions such as booms and recessions".

"Data quality is one of the study limitations. From this research, it is hard to conclude whether the results present the true facts about the situation. The data that has been used is only assumed to be accurate. The measures used may keep on varying from one year to another subject to prevailing condition. The study used secondary data that had already been obtained and was in the public domain, unlike the primary data

which is first-hand. The study also considered selected determinants and not all factors affecting FDI inflows mainly due to limitation of data availability".

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more and more data is added to the functional regression model, the hypothesized relationship between two or more variables may not hold.

5.6 Suggestions for Further Research

This study focused on public debt and FDI inflows in Kenya and relied on secondary data. A research study where data collection relies on primary data i.e. in-depth questionnaires and interviews covering the different sectors that receive FDI is recommended so as to complement this research.

The study was not exhaustive of the independent variables affecting FDI inflows in Kenya and this study recommends that further studies be conducted to incorporate other variables like money supply, cost of labour, technological advancement, education levels, political stability and other macroeconomic variables. Establishing the effect of each variable on FDI inflows will enable policy makers know what tool to use when controlling FDI inflows.

The study concentrated on the last ten years since it was the most recent data available. Future studies may use a range of many years e.g. from 1970 to date and this can be helpful to confirm or disapprove the findings of this study. The study limited itself by focusing in Kenya. The recommendations of this study are that further studies be conducted on other contexts such as other East Africa countries.

Finally, due to the shortcomings of regression models, other models such as the Vector Error Correction Model can be used to explain the various relationships between the variables.

REFERENCES

Abala, D. (2014). Foreign direct investment and economic growth. An empirical analysis of Kenyan data. *DBA African Management Review*. 4(1), 62-83.

Abbas, A. & Christensen, J. (2007). The role of domestic debt markets in economic growth. An empirical investigation for low-income countries and emerging markets. *African Development Review*, 23(1), 81-87.

Akram, N. (2010). Impact of public debt on the economic growth of Pakistan. *Journal of Economic Literature*, 63(4), 32- 42

Alfaro L., A. Chanda, S. Kalemli-Ozcan & S. Sayek. (2003). FDI and economic growth: The role of local financial markets. *Journal of International Economics*, 12(2), 219-227.

Ali. R. & Mustafa, U. (2010). External debt accumulation and its impact on economic growth in Pakistan. *The Pakistan Development Review*, 51:4, 79–96.

Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: Is Africa different? *World Development*, 30(1), 107-119.

Babatunde, S.A. (2012). The impact of tax incentives on foreign direct investment in the oil and gas sector in Nigeria, *Journal of Business and Management*, 6 (1), 1 – 15

Barro, R. & Sala-i-Martin, X. (1995). *Technological Diffusion, Convergence, and Growth.* NBER Working Papers 5151, National Bureau of Economic Research, Inc.

Behera, H., Narasimhan, V. & Murty, K.N. (2008). Relationship between exchange rate volatility and central bank intervention. An empirical analysis for India. *South Asia Economic Journal, 4(2), 12-19*

Bende-Nabende, A., J. Ford, B. Santoso, & S. Sen (2003). The interaction between FDI, output and the spillover variables: Cointegration and VAR analyses for APEC, 1965ñ99. *Applied Economics Letters*, 10 (3): 165ñ72.

Buckley, P. J & Casson, M. C. (1976). The internalization theory of the multinational enterprise: A review of the progress of a research agenda after 30 years. *Journal of International Business Studies* 40 (9), 1563-1580

Casson, M. (1983). Economic analysis of international supply chains: an internalization perspective. *Journal of Supply Chain Management*, 49(2), 8-13

Central Bank of Kenya, (2018). *Statistical bulletin*. Nairobi: Government press.

Charkrabarti, A. (2001). The determinants of foreign direct investment: Sensitivity analyses of cross-country regressions. *Kyklos*, 54(1), 89-114.

Chen, Y.E (1983). *Multinational Corporations, Technology, and Employment*. London: The Macmillan Press Ltd.

Cuthbertson, K. (2004). *Quantity Financial Economics: Stocks, Bonds and Foreign Exchange*. Chichester: Wiley, Corporation.

Denisia, V. (2010). Foreign direct investment theories: an overview of the main FDI theories, *European Journal of Interdisciplinary Studies, 3(1), 48-55*

Devereux, M. B., & Yetman J., (2002). Price setting and exchange rate pass through: Theory and evidence. *In the book price adjustment and monetary policy*, 347-371,

Dunning, J. (1993). *Foreign Direct Investment and Governments: Catalysts for Economic Restructuring.* London: Routledge.

Dunning, J.H. (2005). *Transnational Corporations and Growth of Services: Some Conceptual and Theoretical Issues*. New York: United Nations.

Ernst & Young (2015). *Attractiveness Survey*; Africa.

Fischer, S. (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics,* 32 (3), 485-511.

Gastanaga V., Nugent J., & Pashamiova B. (1998). Host country reforms and fdi inflows: How much difference do they make? *World Development,* 26(7), 1299-1314.

Gikandu, P. N. (2012). *The relationship between domestic debt and economic growth in Kenya*. Unpublished MBA Project, University of Nairobi.

Government of Kenya (2012). *Economic Surveys*, various Issues. Nairobi. Government Printer

Government of Kenya (2015). *Economic Surveys*, various Issues. Nairobi. Government Printer.

Harmon, E. Y. (2012). *The impact of public debt on inflation, GDP growth and Interest rates in Kenya*. Unpublished MBA Project, University of Nairobi.

Hill, C. (2005). *International Business*, 5th Edition, McGraw Hill.

Hooda, J. (2011). *A study of FDI and Indian Economy*. Department of Humanities and Social Sciences, National Institute of Technology.

Hunady, J., & Orviska, M. (2014). Determinants of foreign direct investment in EU countries: Do corporate taxes really matter? *Procedia Economics and Finance*, 12(2), 243-250.

Ismaila, M. & Imoughele, L.E. (2010). *Macroeconomic Determinants of Economic Growth in Nigeria*: A Co-integration Approach

Kadongo, C.O. (2011). *Foreign exchange risk and the flow of international portfolio capital: Evidence from Africa's capital markets*. Unpublished PhD thesis, Witwatersrand: University of the Witwatersrand.

Kasemo, S. M. (2015). *The relationship between interest rates and real estate development cost in Mombasa County*. Unpublished MBA Project. Nairobi: University of Nairobi.

Kibui, P. (2009) *Impact of external debt on public investment and economic growth in Kenya (1970-2007).* Unpublished MBA Project, University of Nairobi.

Kinaro, E.O (2006). *Determinants of Foreign Direct Investment in Kenya Institute* African de Development Economiqueet de planification. Dakar

Kinuthia, B.K. (2010). *Determinants of Foreign Direct Investment in Kenya; New Evidence.* Paper submitted for the annual African International Business and Management (AIBUMA) Conference in Nairobi in August 2010.

Kinuthia, M.M.E. (2012). *Determinants of foreign direct investment in Kenya*. Unpublished MSC project, University of Nairobi.

Klein, T. (1994). External Debt Management. World Bank Staff Papers, Issue 245.

Krugman, P. (1988). Financing vs. forgiving a debt overhang. *Journal of Development Economics*, 29(4), 253-268

Kobayashi, K. (2015). Public debt overhang and economic growth. Policy research institute, ministry of finance, Japan, *Public Policy Review*, 11(2), 21-34.

Mahiti, F.M. (2012), *Determinants of foreign direct investments in east Africa countries of Tanzania and Kenya*, Unpublished MSc-A&F Thesis, Mzumbe University.

Martin, F. M. (2009). A positive theory of government debt. *Review of Economic Dynamics,* 12(3), 608-631.

Matiti, C.M (2013). *The effect of selected determinants on public debt in Kenya.* Unpublished MBA Project, University of Nairobi

Mishkin, F.S. & Eakins S. (2009). *Financial Markets and Institutions* (6thed.). Pearson Prentice Hall

Mohey-ud-din. G. (2007). Impact of FCI on Economic Growth, *Journal of Independent Studies and Research,* 5(1), 24–29.

Moki, M. (2012). *The relationship between public debt and economic growth in Africa*. Unpublished MBA Project, University of Nairobi.

Muema, J. (2013). *An analysis of the determinants of foreign direct investment in Kenya.* Unpublished MBA project, University of Nairobi.

Mwega, F.M & Ngugi, R.W. (2007). *Foreign Direct Investment in Kenya, Foreign Direct Investment in Sub Saharan Africa: Origins, Targets, Impact and Potential*. Africa Economic Research Consortium.

Ngugi, R. (2001). *Development of the Nairobi Stock Exchange: a historical perspective* (No. 27). Kenya Institute for Public Policy Research and Analysis

Nwankwo, A. (2006). *The Determinants of Foreign Direct Investment Inflows (FDI) in Nigeria.* 6th Global Conference on Business & Economics.

Nyamwange, C. (2009). *The relationship between real exchange rates and international trade in Kenya*. Unpublished MBA project. University of Nairobi.

Ochieng, V. & Anyango, A. (2012). The effect of exchange rate volatility on foreign direct investments in Kenya. *International Journal of Education and Research*, 1(9), 12-21.

OECD. (2002). Tax effects on foreign direct investment. *Policy Brief*, 1-8.

Oganda, J. A. (2012). *The relationship between exchange rates and foreign direct Investment in the horticulture industry in Kenya*, Unpublished MBA project, University of Nairobi.

Okafor, H. O. (2012). Do domestic macroeconomic variables matter for foreign direct investment inflow in Nigeria. *Research journal of finance and accounting.* 3, 9-21

Olson, M. (2008). *The rise and decline of nations: Economic growth, stagflation, and social rigidities*. Yale University Press.

Omweri, V. M. (2013). *Determinants of foreign direct investment stock to countries of the east african community,* Unpublished MSC project. University of Nairobi

Onyeiwu, S. (2005). *Analysis of FDI flows to developing countries: Is the MENA Region Different?* Unpublished PhD Thesis, Meadville: Allegheny College.

Ostadi, H. & Ashja, S. (2014). The relationship between external debt and foreign direct investment for D8 member countries. *Walia Journal*, 30(3), 18-22.

Piteli, E.N (2009). Foreign direct investment in developed economies: A comparison between European and non – European Countries, *DYNREG Working papers.*

Ribeiro, H. N. R., Vaicekauskas, T. & Lakstutiene, A. (2012). The effect of public debt and other determinants on the economic growth of selected European countries, *Economics and Management*, 17 (3), 914-921

Ryan B. (2006). *Corporate finance and valuation.* Cengage Learning EMEA.

Schnitzer, M. (2000). Debt V. foreign risk on the structure of international capital flow. *Economica* 69(2), 41-67

Selma, K. (2013). The effects of foreign direct investments for host country's economy. *European Journal of interdisciplinary studies*, 5(1), 12-19.

Shahbaz, M., Lean, H. H. & Kalim, R. (2013). The impact of foreign direct investment on stock market development: Evidence from Pakistan. *Economic Research*, 26(1), 17-32.

Tchereni, B., Sekhamptu, T. and Ndovi, R. (2013). The impact of foreign debt on economic growth in Malawi. *African Development Review*, 25(1), 85-90.

Udomkerdmongkol, M., Gorg, H. & Morrissey O. (2013). *Foreign direct investment and exchange rates: a case study of U.S. FDI in emerging market countries*. Unpublished MBA Project, Sunderland University

United Nations Conference on Trade and Development (1998).*World Investment Report*

United Nations Conference on Trade and Development (2008).*World Investment Report.*

United Nations Conference on Trade and Development (2016).*World Investment Report.*

United Nations Conference on Trade and Development (2017).*World Investment Report.*

Vesarach, K. (2014). The role of interest rates in attracting FDI: A Study on ASEAN 5 Economics. *International Journal of Technical Research and Applications, 5(2), 17-31*

Wamboye, E. (2012). *External debt, trade and FDI on economic growth of least developed countries*, Unpublished PhD Thesis, Pennsylvania State University

Were, M. (2018). *The Impact of External Debt on Economic Growth and Private Investment in Kenya*. Kenya Institute for Public Policy Research and Analysis.

World Bank (2017). *International Debt Statistics.* Washington DC. World Bank.

APPENDICES

Appendix I: Research Data

Year	Quarter	FDI inflows	Public debt	Log Public debt	Interest rate	Exchange rate	Inflation rate	Economic growth
2008	1	24.370	1,275,268,090,000.00	27.874	13.893	1.832	5.870	3.100
	2	31.220	1,295,604,440,000.00	27.890	13.993	1.797	5.390	3.500
	3	19.780	1,299,433,700,000.00	27.893	13.740	1.836	5.380	0.400
	4	23.220	1,401,407,270,000.00	27.968	14.440	1.890	5.040	3.700
2009	1	33.660	1,540,733,990,000.00	28.063	14.773	1.901	4.710	5.600
	2	49.220	1,565,054,390,000.00	28.079	14.883	1.895	4.560	5.400
	3	17.480	1,587,202,500,000.00	28.093	14.763	1.884	4.160	10.100
	4	17.890	1,634,102,450,000.00	28.122	14.797	1.877	4.030	7.700
2010	1	18.230	1,589,079,920,000.00	28.094	14.920	1.884	6.010	5.700
	2	18.360	1,644,853,550,000.00	28.129	14.477	1.898	6.390	7.300
	3	18.470	1,723,331,830,000.00	28.175	14.150	1.908	6.400	10.400
	4	22.560	1,797,262,380,000.00	28.217	13.890	1.907	6.430	12.500
2011	1	24.360	1,888,852,930,000.00	28.267	13.903	1.915	6.470	12.500
	2	25.440	2,051,451,160,000.00	28.350	13.957	1.936	6.480	4.200
	3	25.990	2,312,831,480,000.00	28.469	14.417	1.969	6.590	2.300
	4	27.070	2,224,264,770,000.00	28.430	15.573	1.971	6.660	0.300
2012	1	39.470	2,026,098,480,000.00	28.337	15.620	1.925	6.670	0.300
	2	42.190	2,196,490,000,000.00	28.418	15.977	1.925	6.780	2.200
	3	42.270	2,341,607,330,000.00	28.482	16.083	1.926	6.830	7.200
	4	42.290	2,458,863,780,000.00	28.531	16.403	1.932	6.840	1.200
2013	1	42.390	2,472,577,310,000.00	28.536	16.540	1.938	6.980	10.700

	2	47.240	2,492,596,970,000.00	28.544	16.677	1.927	7.240	10.000
	3	48.790	2,652,103,510,000.00	28.606	16.947	1.941	7.260	7.100
	4	49.200	2,722,594,690,000.00	28.633	16.960	1.934	7.720	5.200
2014	1	52.180	2,798,232,050,000.00	28.660	17.000	1.936	7.850	7.300
	2	52.680	2,994,802,950,000.00	28.728	17.347	1.941	8.150	7.200
	3	52.700	3,268,467,760,000.00	28.815	17.430	1.946	8.320	8.500
	4	53.430	3,348,479,970,000.00	28.840	17.900	1.954	8.630	10.200
2015	1	54.850	3,738,207,120,000.00	28.950	17.920	1.962	9.020	10.100
	2	59.450	4,116,605,760,000.00	29.046	17.927	1.988	10.300	8.800
	3	62.290	4,554,055,050,000.00	29.147	18.147	2.007	10.700	11.800
	4	62.420	4,668,413,520,000.00	29.172	18.323	2.013	11.920	7.000
2016	1	65.110	4,966,877,740,000.00	29.234	20.003	2.008	12.780	8.100
	2	66.020	5,169,157,290,000.00	29.274	20.053	2.005	13.390	7.900
	3	66.670	5,449,976,730,000.00	29.327	20.213	2.006	14.300	6.800
	4	79.830	5,575,832,340,000.00	29.349	13.687	2.007	15.220	4.000
2017	1	89.930	6,145,037,890,000.00	29.447	13.653	2.015	15.830	4.700
	2	210.920	6,649,215,040,000.00	29.526	13.660	2.014	16.830	3.500
	3	150.670	6,925,512,710,000.00	29.566	13.680	2.015	16.290	1.700
	4	57.490	7,059,635,850,000.00	29.585	13.677	2.014	15.920	2.400