EFFECT OF KENYA'S BILATERAL RELATIONS WITH CHINA ON ECONOMIC GROWTH OF KENYA (2000-2015)

SYLVIA WANJIKU

A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF APPLIED ECONOMICS IN THE SCHOOL OF ECONOMICS IN PARTIAL FULFULLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS OF ECONOMICS (INTERNATIONAL TRADE AND FINANCE OPTION) OF KENYATTA UNIVERSITY.

NOVEMBER, 2018

DECLARATION

This project is my original work and has not been presented for a degree in any other University or any other award.

Signature: …….. Date……..

Sylvia Wanjiku (B.A Economics and Finance, Kenyatta University)
K102/CTY/PT/26741/2013

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

Signature……Date……

Dr. James Maingi (PHD)
Department of Applied Economics
School of Economics
Kenyatta University

DEDICATION

To my beloved mother Elizabeth for her endless support and encouragement

ACKNOWLEDGEMENTS

First and foremost, I would like to thank God, The Almighty for His abundance grace and the opportunity He gave me to be able to carry out this project. From concept through to completion, many people have been involved in the development of this project through their advice, encouragement, interest and insight; I offer my most sincere thanks. To the one who put the wheels in motion- The Supervisor Dr. James Maingi, much thanks for your persistence and commitment during the project tenure. Finally, I would to thank my Family, Colleagues and Friends for playing the roles of critics and advisors. Your participation and encouragement was of constant value to the development and completion of this project.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey Fuller
ARCH	Autoregressive Conditional Heteroscedasticity
BOF	Balance of Payments
DAC	Development Assistance Committee
FDI	Foreign Direct Investment
FOCAC	Forum on China Africa Cooperation
GCC	Gulf Corporation Counsel
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GOK	Government of Kenya
JB	Jacque Bera
KNBS	Kenya National Bureau of Statistics
KPSS	Kwiatkowski Phillips Schmidt-Shin
LAPPSET	Lamu Port-South Sudan-Ethiopia-Transport
ODA	Official Development Assistance
OECD	Organization for Economic Corporation and Development
OLS	Ordinary Least Squares
MOFCOM	Ministry of Commerce
NTK	The National Treasury Kenya
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
VIF	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Bilateral Trade: Exchange of goods between countries that have a preference for one another. The agreements give priority to those countries in commercial relationships, aiding trade and investment between home and foreign country by removing or eliminating tariffs, imports and quotas.

Bilateral relations: Political, economic, cultural, historic and cooperation ties between countries

Concessional Loan: Funds advanced at below the prevailing interest rates for a longer lending period than conventional commercial bank or market loans.

Foreign Direct Investment (FDI): Purchase of physical assets or a significant amount of the ownership (stock) of a company in another country to gain a measure of management control.

Foreign Aid (FA): Money that one country voluntarily transfers to another, which can take the form of a gift, a grant or a loan. It could also imply the international transfer of capital, goods, or services from a country or an international organization for the benefit of the recipient country. Aid can be economic, military, or emergency humanitarian assiatance.

ABSTRACT

The importance of bilateral relations to any country is to offer the country the chance to access resources that are not locally available. The bilateral relations between China and Kenya have been developing and evolving since Kenya's independence. This study sought to examine the effect of Kenya's bilateral relations with China on economic growth of Kenya. The objectives of the study were to assess the effect of China's Loans, FDI and AID on Kenya's economic growth. The study was based on, Debt Overhang, Ownership Location and Internalization, Two Gap, Harrod Domer, Solow Swan Growth theories and Endogenous growth model. The study adopted a descriptive research design using time series data from year 2000 to 2015 sourced from Central Bank of Kenya, The Kenya National Treasury and Ministry of Commerce in China. The assumptions of linear regression, such as linearity, collinearity and homoscedasticity were tested. A Multiple Regression Model was adopted in analyzing the data. The results were presented in tables and charts. The findings of the effect of Loans from China had a statistically insignificant effect on the economic growth in Kenya, while FDI from China had statistical significant effect on the economic growth of Kenya and finally Aid from China is most statistically significant effect on Kenya's economic growth. The study concluded that bilateral relations have an effect on economic growth of Kenya. Much of the effect is attributed to AID and FDI, Loans do not bring much effect. The study recommends that Kenya needs to develop a comprehensive policy to govern its aid relations with China in order to safe guard from negative political influence positions in the future. Kenya needs to reduce the amount of money it's receiving from China as debt and encourage foreign direct investment and aid from China.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Developing countries are faced with both opportunities and economic challenges in this period of global civilization. To deal with these challenges and take advantage of the emerging opportunities, bilateral relations with developed countries need to be enhanced. China and Kenya have entered into several trade, political and economic agreements and cooperation. Agreement on: economic and technological cooperation, trade, chamber of commerce of the two countries on machinery and electronics, economic and technical cooperation for interest free loans from the Chinese Government, a framework for providing concessional loans for Kenya's development projects and agricultural cooperation between the Government of Kenya; through the Ministry of Agriculture, Livestock and Fisheries. Positive link between effect of bilateral relations and economic growth is evidenced by more advanced econometric techniques (Kaplinsky & Morris, 2006).

Lopez, *et al.,* (2007) and Amuedo-Dorantes & Pozo (2004); the relations in stabilizing the real exchange rate among nations, while Rajan & Subramanian (2005) argue that may only occur in countries where overvalued exchange rates are present. Ties on political, economic, and cultural among nations may be characterized by common knowledge, understanding and community awareness about the other country and any ties existing between them, (Stein & Zozan, 2013), and therefore cooperation becomes a prerequisite for strengthened bilateral relations. Bilateral relations in most cases are measured by the foreign loans, foreign direct investment and foreign aid advanced to a given state.

Since 1980's China has been a strong ally to Kenya. What makes the relationship between Kenya and China special is that China's ability to take diverse forms. China has actively personified her relationship with Kenya in different ways. China has contributed largely to

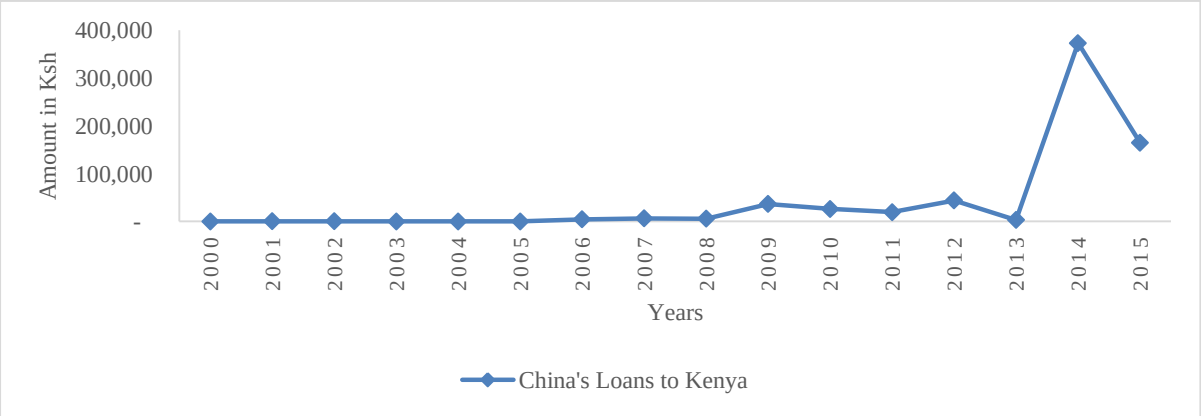
Kenya's infrastructural development: Jomo Kenyatta International Airport ($115 million), SGR ($3.6 billions), Thika Super Highway ($320 Million), LAPPSET ($220 million), geothermal project at Olkari ($400 million), Kenya Power Distribution System Modernization Project in Malindi ($185 million, Outer Ring Road ($108 millions), Nairobi Mombasa super highway ($320 Million), among others (NTK, 2015). This can attest to the tangible embodiment of Chinese relations with Kenya. The contributions to the above have been either through, loans, foreign direct investment or aid.

1.1.1 China's Loans to Kenya

China is currently Kenya's biggest bilateral lender. Kenya's Chinese debt stood at Sh262 billion in June 2015, compared to Sh82.9 billion) in 2014 and Sh14.7 billion in 2010, (CBK, 2015). This debt has grown at a rate, averaging an annual growth rate of 54 per cent between 2010 and 2014 (NTK, 2015).

The largest beneficiaries of the Chinese loans are the Ministry of Energy and Petroleum which received Sh12.6 billion, Transport and Infrastructure KSh5.6 billion and Information and Technology, Sh2.5 billion (CBK, 2015). The two above mentioned sectors being the core of the economy of Kenya the effect on them is to be felt by the aggregate economy.

China's loans to Kenya have steadily increased during the period depicted in figure 1.1.



Source: Ministry of Finance, China

Figure 1:1 China's Loans to Kenya

The period 2000 to 2008 shows a steady inflow in the annual debt to China. This was occasioned by the beginnings of a relationship with the east after it emerged that financial assistance from the west came with political ties.

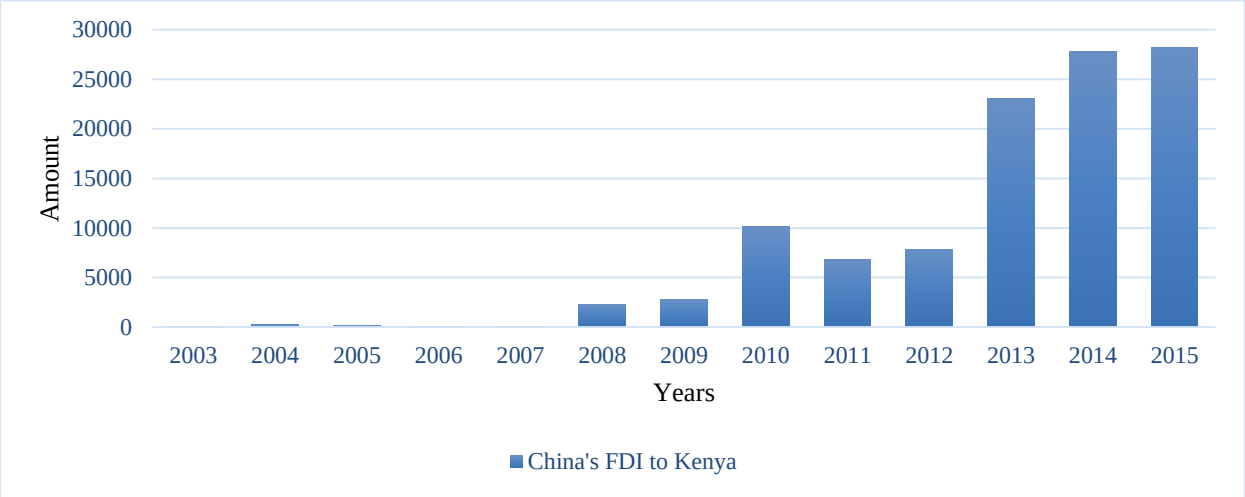
The jump from the year 2014 was due to a change of government which saw Kenya heavily to China for assistance. Kenya formed and forged relationships with China in a bid to undertake development projects in the country.

The decline in 2014 was occasioned by a slowdown in lending to Kenya as the country could not maintain the borrowing trend as the nation's development project are long term in nature and results.

1.1.2 China's Foreign Direct Investment to Kenya

According to Sornarajah (2004) FDI is the transfer of tangible or intangible assets from a natural person or from a company where the majority of shares are directly or indirectly held by natural persons of foreign nationality, into a host country with the specific purpose of use in that country to generate wealth under the total or partial control of the owner of the assets.

The FDI between China and Kenya has increased considerably between 1990 and 2000, however the effect differs among different regions determined by the relations and commodities involved (Jenkins and Edwards, 2005, Broadman *et al*., 2006, Kaplinsky & Morris, 2006). The year 2000 saw FDI between China and Kenya reach US$137 million, with US$133 million being imports from China to Kenya and US$ 4million being Kenya's exports to China. In 2002 the FDI between the two countries hit US$186.37 million, exports being US$180.576 million and import US$5.798 million from China.



Source: UNCTAD Bilateral FDI Statistics.

Figure 1:2 China's FDI to Kenya

The trend of China's FDI to Kenya shows a continuous increase over time as shown in Figure 1.2. FDI in the early 2000s was lower than that in 2015 as Kenya had been receiving financial foreign investment from the West where most of the manufacturing companies were located.

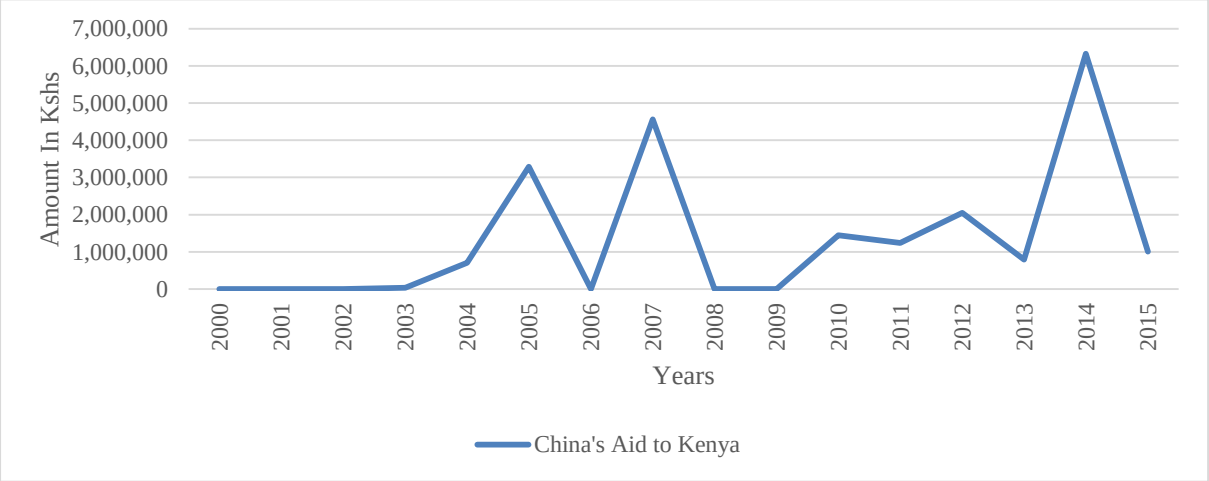
The rapid increase in FDI from 46 Million in 2008 to 265 Million by the year 2015 as shown in figure 1.2 has been as result of nations outsourcing their labor to China. In the current market environment all major manufacturing plants are located in China due to the availability of cheap labor.

Further the increase in FDI can be credited to the openness of the economy and the political regimes that Kenya has had in the last two decades.

1.1.3 China's Foreign Aid to Kenya

As observed by Radelet; (2006) foreign aid is one of the largest constituents of foreign capital flows to low-income countries. Researchers have found that foreign aid has positive effect on economic growth by providing the additional capital and human expertise needed to countries that cannot afford to do so on their own (Rosenstein-Rodan, 1961), Chenery and Bruno, (1962), Chenery and Strout, (1966), Mosley, (1980), Mosley, Hudson & Horrell, (1987;)

Karras, (2006). Kenya has been a recipient of Foreign aid over a long period. In 1963, foreign aid was regarded as critical to economic rebuilding and with passing time it has become a noteworthy ingredient for economic development. The foreign aid proportion to GDP has been low with an annual average of 6.3 per cent between 1990 and 2014 and yet there has been economic growth of the country.



Source: China Ministry of Finance
Figure 1:3 China's aid to Kenya

From the year 2005 to 2015 the amount of foreign aid range from 3M to an all-time 6.5M in 2015 as shown in Figure 1.3.

The rise in aid to Kenya in the year 2004 and 2005 is strongly attributed to the political regime of that took over in 2003. The regime strategically forged partnership with China recognizing that it was quickly becoming a world economy to reckon with. The aid decreased over 2005 and 2006 as the Kenyan economy began to show significant growth and did not need to rely heavily on foreign aid.

The year 2008 saw a decline in aid from China which can be attributed to the troubled political elections of December 2007. Kenya concentrated on restoring peace and thus experienced a slowdown in economic activities. Afterwards Kenya resumed its pursuit for foreign aid to assist in rebuilding the economy and the economic growth it had started to experience.

1.1.4 Economic Relationship between China and Kenya

China Customs (2015), the bilateral trade volume between the two countries in 2005 rose to Ksh 4.8 billion, which was up by 29.7 percent from Ksh 3.7 billion, China's export being Ksh 4.6 billion, an increase of 31.0 percent, while China's imported Ksh 200 million from Kenya, up by 4.0 percent, (MOFCOM,2015). According to MOFCOM (2014) the turnover of completed engineering contracts by Chinese companies in Kenya Ksh 3.532 billion in 2005, while the volume of the newly signed contracts was Ksh 6.724 billion. The volume of completed labor service cooperation contracts was Ksh 67 million, and that of the newly signed labor service cooperation contracts was Ksh 500 million.

From 2000 to 2015 China has loaned and issued grants to Kenya which has been absorbed by different sectors like plant equipment, roads, medical research, innovation, infrastructure and rural electrification.

By the late 1990s, China had established four hundred and eighty joint ventures in forty seven countries in Africa; far reaching eastern Africa countries and Kenya being the epic Centre of focus. According to Mugendi, (2011) China's aid to Kenya was never unconditional; over the years, China restructured its aid policy and imposed more restrictions. Interest-free government loans became discount loans offered through Chinese banks and aid grants were replaced by joint ventures and other forms of cooperation.

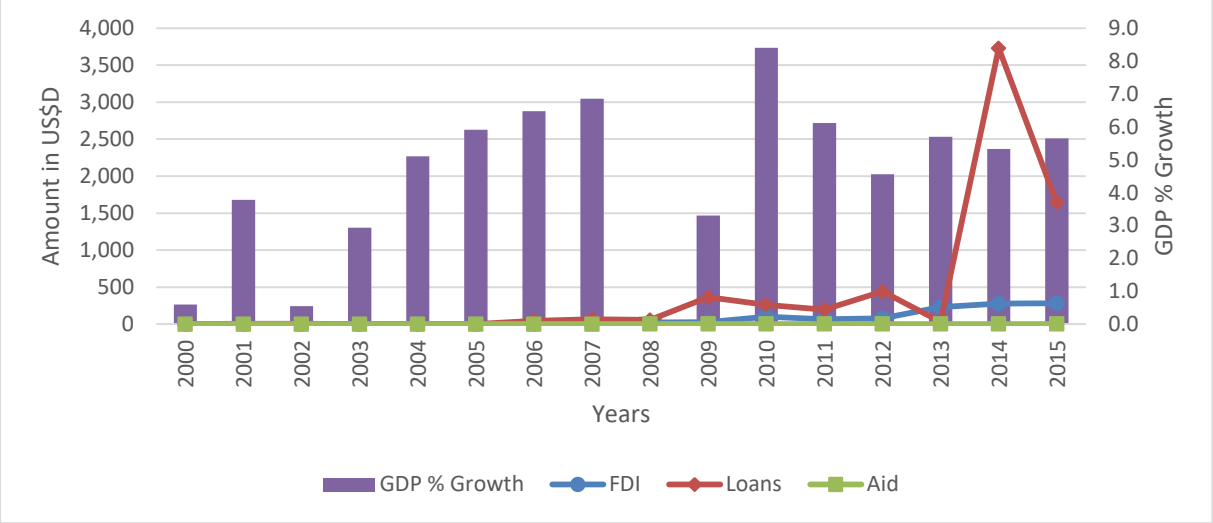
1.1.5 Economic Growth of Kenya

China currently issues loans to Kenya for construction and infrastructure. According to Fiott (2015) the Chinese government loaned Kenya a total of KSH 20.6 billion in year ending in 2015. The funds were channeled to the following sectors, ministry of energy and petroleum, ministry of transport and infrastructure, and ministry of information, communication and technology (ICT). These loans were expected to affect Kenya’s economy through growth.

Manufacturing and service sector in Kenya has brought about a rise in FDI and the further Chinese interest has extended to mining and mineral exploration. The manufacturing sector slowed growth at 3.4% in 2014, down from 5.6% in 2013, and there are apprehensions that slower growth could be a sign of early decline of this industry (Chen, *et al* 2015). In 2013, the cabinet secretary of mining revoked all the mining licenses to give way for renegotiation; after which more Chinese companies won the contract. The Chinese government has heavily invested in improving Kenya's infrastructure. Most of major infrastructure having being done by Chinese; these includes Thika Superhighway, Kisumu International Airport, Jomo Kenyatta International Airport. These developments are eventually expected to affect Kenya's economy.

Aid from China has benefited Kenya especially in the education and health sectors. In the health sector China has been involved in malaria prevention and control by setting up centers and offering volunteers to train the local people. On education, China has provided training programs, university scholarships and language programs. In 2010 China spent Ksh 1.2 billion on volunteers and Ksh 1.2 billion on trainings (UNESCO 2015). In Kenya China has been providing scholarships from 1984 starting with ten students while in 2007 the number increased to 40 students. With the assistance in education it has led to people finding gainful ways of making an income.

There has been an average of 5.47 % in Kenya's GDP Growth Rate from 2004 to 2015.



Source: *World Bank*

Figure 1:4 GDP Growth, compared to Chine's FDI, Loans and Aid

The figure 1.4 shows a comparison of Kenya's economic growth to loans, FDI and aid from China to Kenya over the period 2000 to 2015 years. The Figure shows a trend of increase in the three components with some years like 2008 showing the effect of political instability on bilateral relations. Aid from China compared to FDI and Loans has had the least in volumes received in Kenya. This has been occasioned because countries would rather give loans or invest in other countries, which has a positive effect on its own balance of payments as opposed to giving aid.

The sharp increase in loans in 2014 has been occasioned by two factors namely, the political regime and increase in government spending which has lead to deficits in the budget for Kenya. The expenditure for the government of Kenya has been on the increase over the last decade which has resulted in the nation increasing its borrowing powers to meet the expenditure.

There has also been an increase in the FDI inflows from China from 2010 to 2015. The FDI increase has been brought about by policy changes in the Kenyan Government backed by government regimes. The steady increase from 2012 to 2015 can be linked as a direct effect

China not participating in any way in the political matters in Kenya Government. The non-interference from China led to leaning of the government of Kenya to favourably consider Chinese investments and partnerships while withdrawing its previous comrade with the West. The increase in the FDI from China has further led Kenyan to quickly appreciate and climb the technology ladder in the world (Chami, *et al* 2005).

1.2 Statement of the Problem

The surging entry of China into African economies has continued to attract varying views. Bilateral relations between China and Kenya are expected to stimulate Kenya's economic growth significantly. Kenya's economic growth is centered in: infrastructure development, ICT, building and construction, manufacturing and vibrant services sector, investment in energy and transportation.

With improvement of infrastructure and enhanced construction, it has seen an influx of many foreign companies coming Kenya to invest (increase in FDI); leading to job creation and appreciation in prices of property. The loans on the other hand have led to increased inflation, increase in debt burden, and effect on rate of interest. The aid has been helpful as it allowed for improvement of community life and welfare in the rural areas without the pressure of needing to repay the funds.

However, Mugendi, (2011) stated that China's aid to Kenya has never been unconditional. This statement has been proven by restructuring of its aid policy by China and imposition of more restrictions. This resulted, in interest-free government loans becoming discount loans offered through Chinese banks and aid grants were replaced by joint ventures and other forms of cooperation increasing Kenya's debt burden from China.

The relations with China have touched on each of the major sectors aforementioned and thus an assessment of their effect on economic growth is critical. The increase of loans, FDI and

aid lead to an increase in the country's investments which fosters economic growth. According to World Bank (2015), Kenya's real GDP growth was 4.6% (2012), 5.7% (2013), 5.3%, & 5.5% in 2014 and 2015 respectively. During these years, there has also been an increase in the flow of loans, FDI and aid from China to Kenya.

According to the IMF (2005) bilateral relations exist but there seems to be contradictory results, (Chami, *et al.*, 2005), argue that there is statistical significant link between GDP growth and increased bilateral agreement among countries. However according to Chami *et al.,* (2008) states "there is little evidence of a significant effect of bilateral relations on growth, especially in developing countries."

With there being two schools of thought on the significance of GDP growth and bilateral relations, this sought to find out if the significance of bilateral relations between Kenya and China can be seen in the Kenyan economy.

1.3 Research Questions

1. What is the effect of loans from China on Kenya's economic growth?
2. What is the effect of Foreign Direct Investment from China on Kenya's economic growth?
3. What is the effect of foreign aid from China on economic growth of Kenya

1.4 Research Objectives

The general objective of the study is to determine the effect of Kenya's bilateral relations with China on economic growth in Kenya. The specific objectives being:

1. To establish the effect of loans from China on Kenya's economic growth.
2. To examine the effect of Foreign Direct Investment from China to Kenya's economic growth.
3. To investigate the effect of foreign aid from China on economic growth in Kenya.

1.5 Significance of the Study

This study has made contributions to theory of economic growth, and international relations. Further the study has provided a framework that links bilateral relations and economic growth of countries. Existing literature has pointed out to the need for more studies on submission of bilateral relations.

Importers and exporters, especially in developing countries, will find this work useful in making decisions regarding operations of their organization by taking advantage of the cordial relations between the Kenyan and Chinese government. This study provides, based on empirical evidence the best ways to address and therefore improve their economic growth.

The study adds value to policy makers; government, where evaluation and advising the government on the cheapest ways of financing, (long term & short terms loans). For the researchers: areas of further studies, contribution to theories and empirical review, which researchers can further explore.

1.6 Scope and organization of the Study

The study was carried out in Kenya. The study used data for of 16 years, for the period between 2000 and 2015. The period was selected the basis that during these years there was significant and measurable growth in among the three variables. The trends were visible in this period.

The study is presented in five chapters. Chapter one comprises of: background of the study, statement of the problem, research questions, objectives of the study, significance of the study, scope and organization of the study. Chapter two contains: theoretical literature, empirical literature and overview of the literature. Chapter three includes: research design, definition and measurement of variables, data type and source, time series properties, data analysis and diagnostic. Chapter four is made up of: data characteristics, diagnostic test

results, and empirical results. Finally, chapter fives encircles: summary of the results, conclusion, policy implication and suggestion for further studies.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

The literature reviewed was discussed in this section. The chapter sought to give a view of that which has already been challenged and proven. It sought to establish important dimensions of the problem and allows access to completed studies that have proven useful to the problem.

2.2 Theoretical Literature

Theoretical review involves studying theories that have been advanced in regards to the areas of study pertaining to a specific field. Bilateral relation between nations has its origin grounded in needs and wants for the different nations. Trade was the initial foundation of the relations but due to different resource endowment of nations, relations developed to beyond trade to include aid, loans and foreign direct investment.

Developing countries have received significant aid inflow in the past years as noted by (OECD 2009, Ekanayake & Dasha 2009). According to OECD (2008), the total net ODA in year 2008 rose by 10.2% translating to US$119.8 billion and US$130 billion, this aid was from members OECD's Development Assistance Committee (DAC). The largest beneficially being Africa.

2.2.1 Debt Overhang Theory on Foreign Loans

Myers (1977) argues that as countries or firms continue to borrow the outstanding claims are senior and there will come a time when the countries debt will be more than its capacity to repay. Study by Krugman (1982) has shown a positive relationship between debt and economic growth detailing that debt overhang as where projected settlement of debit outstrips the real volume to which it was contracted.

This has led developing countries to borrow in order to keep up economic growth. However, this simplified theory will lead firms and countries to make ineffective decisions as to at what point they should stop borrowing. The countries have reached the optimum borrowing levels and since they have taken long term loans any new viable opportunities that require debt financing find the country at a state where it cannot borrow. Further Borensztein (1998), defined debt overhang, as a situation where the debtor nation benefits as diminutive from the yields on extra investment due to vast debt service commitments.

This theory explains that excess debt within a nation leads to discouraging investors due to fear of heavy tax placed upon them. They fear higher taxes for the government needs means to meet its obligations to repay the debts it has. This is an assumption investors have and it leads to disinvestment and to overall decline in economic growth. Clement *et al* (2003) observed that borrowing extensively especially externally promote investment and economic growth up to a certain point (optimum level). In this case the overhang kicks in, leading to deterioration by investor's willingness.

This theory links Kenya's appetite for borrowing against which multi cooperation's have set up shop in Kenya.

2.2.2 Ownership Location Internalization or Eclectic Paradigm Theory on Foreign Direct Investment

OLI paradigm theory by John Dunning (1993). This theory explains the connection between economic growth and Foreign Direct Investment. OLI in full is Ownership, Location and Internalization. The three components are used to measure the value that FDI has on economic growth especially on the host country. Ownership refers to what is commonly known as knowledge capital. This is in different forms such as human resource management, the reputation of a particular company, the brand identity, patents and technological

knowhow. Ownership further can be viewed as capital replica-table and transferable into different nations without losing value and incurring high transactional costs. Location mainly checks whether or not the investment in a foreign country either save on transport costs, reduce the costs of inputs, take advantage of trade barriers, special tariffs or provide services that reduce overhead costs for the company. If the considered country can offer a few of the mentioned conditions that have significant effect on saving cost for the investing country the country then chose to invest there.

Internalization will consider if it is cost effective for a country or an organization to produce a product itself. It will consider if it cost effective to have another country produce the good itself and therefore outsource production of the said good. If the costs are more effective when the good is internally produced the country will retain production, if not the country will outsource for cheaper production costs.

All the above are factors considered that China and Kenya considered as the two countries partner together.

2.2.3 Two Gap Model of Foreign Aid

This model was established by Chenry and Strout in 1996. The model is amplification to Harrod Domer's hypothesis of investment limited growth which assumes that a specific amount of investment increases growth. The model is anchored in two gaps; the first gap is between investment and available domestic saving to attain a certain rate of growth. This is known as the savings gap. The second gap also referred to as the trade gap which occurs when there is a gap between import requirements and foreign exchange earnings. If the saving gap is larger than the trade gap, this undermines productive investment because of the limited imports of capital goods that are needed for investment. This theory further supports that at any time one gap is binding in aid recipient countries and thus foreign aid is required to fill that gap.

The supposition that foreign aid resolve to fill this gap is only viable if the lack of investment is from constraints of liquidity and not unfavorable conditions to invest. If conditions are unfavorable, it does not matter how much foreign aid is directed to a country, the aid do not increase investment rather finance consumption. Also to note is that the foreign aid effectiveness greatly depends on the output of the investments made not just inflow of the aid for use in any sector of the government.

$Y = C + I + (X - M)$

Savings; S = Y- C

$I - S = M - X = F$

$I - S : Saving\ Gap$

$M - X : Foreign\ Exchange \frac{Gap}{Trade\ Gap}\ Foriegn\ aid\ is\ expected\ to\ fill\ in\ this\ gap$

$F: Foreign\ Financing$

From the above model, Kenya has been experiencing a saving gap from independence which can be bridged foreign aid if received constantly.

2.2.4 Harrod Domer Theory

Domer (1939 & 1946) based on the national accounting model states that economy's growth rate depends on the national savings which can include Loans, Foreign Direct Investment or Aid if the country has no savings of its own. The model emphasizes the importance of investments and savings as determinants of economic growth. This is identification that output is dependent on investment rate and productivity of the same investment. The model states that the higher the savings and investment of a country the greater its growth. Domer further implied that GDP growth is proportional to the share of investment spending in total GDP.

$GDP = C + I + G + NX$
$where$:

C is Consumption, I is Investment, G is Government Expenditure, NX is Net Exports

Harrod Domer investigated, $g = \frac{\Delta Y}{Y}$?

Growth equals to change in Income divide by the income of a specified time. Output is assumed to be proportional to capital input;

$\frac{K}{Y}$ is constant $v = \frac{K}{Y}$ (v is capital − output ratio),

$Y = \frac{K}{v}, v\ is\ constant, \Delta Y = \frac{\Delta K}{v}$

Net change of capital input (ΔK) is equal to investment (*I*) less capital depreciation *d*. *K* (*d*; depreciation rate), $\Delta K = I - d.\ K$

Savings eventually are invested thus $S = I$. The sum total of domestic and foreign saving is financed by investment in the open economy. Assuming savings is a fixed proportion of income $S = s.\ Y$. Substitute this

$\Delta K = I - d.K = s.Y - d.K = s.Y - d.v.Y = (s - dv).Y$

Growth rate g, $g = \frac{\Delta Y}{Y} = \frac{\Delta K}{(v,Y)} = \frac{(s-dv).Y}{(v,Y)} = (s - dv).v = \frac{s}{v} - d$

$g = \frac{\Delta Y}{Y} = \frac{\Delta K}{K}$

$g = \frac{s}{v - d}$

$g = s/v\text{-}d$

$s: saving\ rate\ v: capital\ output\ ratio\ d: depreciation\ rate\ )\ d\ and\ v\ are\ assuned\ to\ be\ constant\ thus\ the\ only\ variable\ that\ can\ be\ changed\ is\ s$

The theory gives two factors for growth which are quantity of national savings & the capital output ratio, where capital ratio is inversely proportional to the rate of growth. The theory concludes that the higher the savings rate the faster the rate of growth. It also assumes that the higher the savings, the more funds available to borrow and invest. Ultimately investment increases capital stock; which in turn generates economic growth caused by the rise in production of goods and services.

2.2.5 Solow Swan Growth Model

The model was established by Robert Solow in 1956, it is based on assessing long run economic growth set within neoclassical economic framework. It is anchored on assumptions of variables such as: labour, knowledge (technological growth) and capital output. Further the model cross examined the important determinants of GDP growth such as: technical progress increased labour supply and capital accumulation where weighty determinants of growth in per capital GDP. The model further asserted growth rate at temporarily bases is sustained by

rise in capital investment, due to capital labour ratio growth and the assumption of constant returns to scale of the production function. Further cross examination showed that time enters the production function through capital, labour and knowledge meaning that output changes over time only when inputs change. Nonetheless, marginal product of added units of capital may decline (occasioned by diminishing returns) causing the economy to move back to a long term growth path, where real GDP grow proportionately to the workforce plus a factor to reflect improving productivity.

$Y(t) = K(t)^{\alpha}(A(t)L(t))^{1-\alpha}$

Mathematically:

Y = Total output produced

$y = \frac{Y}{L} = per\ capital\ output$

$K = Total\ Capital$

$k = \frac{K}{L}\ Capital\ Intensity$

C = Consumption

S = Savings

s = Share of output that is saved

I = Investment

δ = depreciation rate

$A = \frac{Productivity}{Technology}$

α = Share of capital in output production

$n = \frac{L_t + 1 - L_t}{L_t} = Labor\ growth$

$where\ t$ is value of the economic variable today and $t + 1$ is value of the economic variable tomorrow.

1. The Production Function:$Y_t = F(K_t, L_t) = AK^{\alpha}tL^{1-\alpha}t$
2. Allocation of National income: $Y_t = C_t + S_t$
3. Savings as a constant share of income: $S_t = sYt$
4. Assumption: All savings are invested back into the economy: $S_t = I_t$
5. $where\ I_t = K_{t+1} - (1-\delta)K_t$

From equation (3), (4) and (5) we obtain,

6. $K_{t+1} = (1-\delta)K_t + sY_t = (1-\delta)K_t + sF(K_t, L_t)$
7. $K_{t+1} = (1-\delta)K_t + sY_t = (1-\delta)K_t + sAK^{\alpha}tL^{1-\alpha}t$

Equation (7) in capital intensive form is given as:

8. $(1+n)_{kt+1} = (1-\delta)_{kt} + sAK^{\alpha}t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Solow\ Equation$

2.2.6 Endogenous Growth Models

These are theories by different economists such as, Lucas (1988), Romer (1986) and Rebelo (1991). Endogenous growth economists based their arguments on improvement of productivity being associated directly to a fast pace of innovation and investment in human capital. Polies adopted by country's government can raise the growth rate, if more intense competition in the market; which stimulate innovation of product and processes. Returns to scale has been in increasing from the capital investment especially in infrastructure, investment in education, health and telecommunications. The endogenous growth theories propose channels through which steady-state growth arises endogenously; the role of externalities, the assumption of constant returns to scale, interaction between economic growth and financial development and the role of human capital accumulation and knowledge. World Bank (2015) found that, for under developed and developing countries every 10% increase in broadband accelerated GDP growth by 1.38%. Capital investments come about from increase in Loans, FDI and Aid in a country.

The Model can be illustrated as:

$$Y_i = AK_i^{\alpha} L_i^{1-\alpha} \overline{K}^{\beta}$$

$$Y = AK^{\alpha+\beta} L^{1-\alpha}$$

$$g - n = \frac{\beta N}{[1-\alpha-\beta]}$$

Where:
Y – Output
A – Technological Growth Rate
K- Capital
L- Labour
g- rate of growth of output
N- Population Growth

2.3 Empirical Literature

2.3.1 Foreign Loans on Economic growth

Stimulating long run growth in under developed economies has been doubted on their ability to get foreign capital inflows, (Mishra, *et al*., 2001). According to Hausmann & Fernandez-Arias(2000), many developing economies favor capital inflows, which they view as international debt flow (short-term variety) as bad cholesterol.

Hassan *et al.*, (2005) concluded that foreign debt has both a negative and an insignificant impact on the economic growth as seen among the surveyed countries. The study examined eight two under developed countries for a period of 10 years. Economic growth was measured by the average of the natural log of GDPs of each included country; foreign loans were measured by the natural log of the average total foreign loans. It concluded that foreign loans do not have a direct influence on economic growth. Although this factor has a negative effect, it is not significantly different from zero.

Using advanced econometric technique (Godfrey & Cyrus 2012) studied the relationship between domestic debt and economic growth in Kenya from 2000 – 2010. The study used (JB) and (ADF) test and concluded that domestic debt has a positive and significant effect on economic growth in Kenya.

Mageto (2015), on Public Debt and Economic growth in Kenya, determined a positive coefficient association of public debt to increase in GDP of 2.05% in the short run, therefore public debt leads to increase in economic growth and investment. Although the study adopted a longitudinal research design based on Barrow growth regression. The study found that public debt has led to increased economic growth and increased investment.

2.3.2 Foreign Direct Investment on Economic growth

According to Hassan *et al.* (2005), FDI has a positive and significant effect on economic growth of under-developing economies, further affirmed by Aitken & Harrison (1999), where FDI increased productivity, in turn promoting growth under certain conditions like skilled labor force, well developed structures among other which productivity benefits are accrued.

Further (Moyo, 2005), observed that monies raised to fund the development initiatives, attracts other benefits that attract FDI, which indeed creates more jobs, help in stimulating the formation of capital markets, transferring new technology, improving management expertise and aiding indigenous firm in opening up for international markets.

Abala, (2014) conducted a study on empirical analysis of FDI on economic growth a case study of Kenya, ascertained resources sought on FDI didn't have any significant effect on the economic growth, however markets that sought FDI had a significant effect on economic growth, which resulted to good infrastructure and political stability of the country.

Robert *et al.*, (2014) conducted a study investigating the impact of FDI by Chinese Companies in Kenya, where primary data gathered from employees of various organizations were analyzed using ordinary least squares method. The study concluded that FDI contributed positively to economic growth attributed to human capital, capital supply and creation of employment. The study being drawn from survey research design and primary data may however be have reflected bias results.

Muhammad & Ijirshar, (2015) carried out a study in Nigeria to examine the effects of FDI on economic growth. For empirical analysis the study espoused econometric techniques of ADF unit of roots, pairwise granger causality test, Johansen co-integration (to test for the stationarity) and ECM (for correction of non stationarity errors). The study concluded that units had unidirectional relationship between GDP and FDI.

Study by Maranga, 2015 on FDI, International Trade and Economic growth a case study of Kenya, where autoregressive distribution lag approach in regressing real GDP on FDI for forty three years (from 1970-2013) was used. Concluded that FDI had a positive and significant effect on economic growth with results further showing that imports, lagged value of tax revenue and foreign debt stock being components of GDP had negative and significant effect on economic growth.

2.3.3 Foreign Aid on Economic growth

Ekanayake & Dasha (2009), studied the effect of foreign aid on the economic growth of developing countries. With study sampling eighty five developing countries for period twenty seven years (1980-2007). Three different models were used, shorter time periods, 1980-1983,

1990-1999, and 2000-2007, different regions, Asia, Latin America, Caribbean and Africa and with different income levels; namely low income, middle, upper middle and all other levels of income. It was concluded foreign aid has mixed effects on economic growth. The mixed observations were based on different periods of time, and the very regions sample, where foreign aid had a negative and adverse effect on economic growth. Nonetheless, positive response was recoded in African region for foreign aid. When testing, different income levels, foreign aid variable had a positive sign in three out of four indicating foreign aid affects economic growth positively in developing countries thou its negative for low-middle income countries.

Moreira (2005) established that foreign aid had a positive effect on economic growth. To note, however aid has a lesser effect on growth in the short-run. The study had adopted cross country growth regressions an expansion form Papanek-type regression.

Uneze (2011), sought to determine the relationship between foreign aid and real exchange rate using multivariate econometric approach; the study concluded that there is an appreciation of the real exchange rate over the period 1975-2005, contributed by foreign aid. But this appreciation was not only from the foreign aid but factors such as: labor productivity, terms of trade improvement, government consumption and non-tradable goods which had further association with the appreciation of the real exchange rate.

Using Samuelson model studies (Ojiambo, 2014), established a positive effect of foreign aid to economic growth. Kenya was used as the case study and time series data of 44 year (1966-2010) was run. The study found out that the lagged effect of foreign aid positively affected the GDP after one year duration. Though the unpredictability of foreign aid to Kenya seemed to negatively affect economic growth.

Kamau, 2015 in a study of Foreign aid and economic growth a case of Kenya, adopted empirical testing resting on neo classical modeling analytical framework found a negative relationship between aid and economic growth. The study determined a one percent increase in foreign aid would result in 0.613 decreases in economic growth in the long run.

2.4 Overview of the Literature

Studies on Foreign loans effect on economic growth have had different views with there being significant disparity in their conclusions. Study by (Hassan *et al.*, 2005) established that there is a negative and insignificant effect on economic growth from loans. Mageto, (2015) on similar analysis found that public debt has led to increased economic growth and increased investment.

The past studies on effect of FDI on economic growth by (Robert *et al* 2014 & Maranga, 2015) determined there is sufficient, significant and positive relationship between FDI and economic growth, with (Abala, 2014), taking a forming a different conclusion of a negative relationship between FDI and economic growth as the study focused specific type of FDI.

Different opinions have been expressed by different studies and scholars whether foreign aid has effects on economic growth. Moreira (2005), on foreign aid has a positive effect on economic growth with aid having less influence on growth in the short-run. While Kamau, 2015 found the relationship to be negative.

Past studies have been conducted on a number of countries; the cross country studies are not conclusive to a specific country. Due to heterogeneity between countries the results differ for each country when take case by case. The mixed feelings about the effects of the FDI, loans and Aid on economic growth has prompted this study and more specifically with relation to China. There have not been studies which investigate the effects of bilateral relations with China to Kenya, despite the overwhelming shift of Kenya's bilateral relations from other countries to China. This study has shed light on controversies as to whether Kenya should slow down its interactions with China.

CHAPTER THREE:

METHODOLODY

3.1 Introduction

The chapter discusses the research structure, the theoretical framework model, empirical models and models specification, definitions and measurement of variables, data type and source, diagnostic tests data analysis that researcher applied in the study.

3.2 Research Design

This study aims at establishing the empirical effect of Kenya's bilateral relations with China on the economic growth of Kenya. The study adopted a descriptive research design; more specifically, non- experimental research design. According to Open-book (2017), a descriptive research design is one that lacks manipulation of an independent variable, control of extraneous variables through random assignment, or both. The time series data was collected for the following variables: total loan from china, total foreign direct investment from china, total aid from China, Kenyan inflation rate, Kenya expenditure rate and Kenya's growth annual GPD for the period 2000-2015.

3.3 Theoretical Framework

The study adopted Harrod Domer's theory of economic growth. The theory's foundation is the National Income Accounting Model; which highlights that output depends on the investment rate and the productivity of that investment.

$GDP = C + I + G + NX$ ……3.1

$where$:

$C - Consumption,$

$I - Investment\ ,$

$G - Governmnet\ Expenditure,$

$NX - Net\ Exports$

Harrod Domer investigated,

$$g = \frac{\Delta Y}{Y}? \ldots \ldots 3.2$$

Growth is equal to change in income divided by the income of a specified time period.
Output is assumed to be proportional to capital input;

$$\frac{K}{Y} \text{ is constant} \ldots \ldots 3.3$$

$$v = \frac{K}{Y} (v \text{ is capital} - \text{output ratio}). \ldots \ldots 3.4$$

Simply 3.4 $Y = \frac{K}{v}$ v constant, $\Delta Y = \frac{\Delta K}{V}$ …………3.5

Net change of capital input (ΔK) is equal to investment (I) less capital depreciation d . K (d; depreciation rate)

Mathematically; $\Delta K = I - d.\ K$……………………………………………...…......3.6

Savings eventually are invested thus $S = I$

In an open economy, investment is financed by savings which is a sum of domestic and foreign saving. Assume saving are is a fixed proportion of income $S = s.Y$

Substitute this in equation 3.6

$$\Delta K = I - d.K = s.Y - d.K = s.Y - d.v.Y = (s - dv).Y \ldots \ldots 3.7$$

Growth rate g, combine 3.5 and 3.7

$$g = \frac{\Delta Y}{Y} = \left(\frac{\frac{\Delta K}{v}}{Y}\right) = \left(\frac{\Delta K}{v.Y}\right) = (\frac{(s - dv).Y}{v.Y} = (s - dv).v = \frac{s}{v - d} \ldots \ldots 3.8$$

$$g = \frac{\Delta Y}{Y} = \frac{\Delta K}{K} \ldots \ldots 3.9$$

$$\therefore GDP = \text{proportional to the share of investment spending}$$

Capital is assumed to come from either savings of the home country if the savings are available. If savings are not available the country resorts to foreign aid or loans for its investment.

$$g = \frac{s}{v - d} \ldots \ldots 3.10$$

(where s: Saving, v: Capital Output Ratio, d: Depreciation)

d & v are assumed to be constant thus the only variable that can be changed is s.

In this study s is determined by foriegn aid, FDI & Loan from China as

Kenya does not have its own savings that it can invest.

The equation implies that; the higher the saving rate the greater the economic growth.

3.4 Empirical Model

Equation 3.10 above means the economic growth can be determined by saving rate of a country. For this case this is determined by foreign loan, foreign direct investment and foreign Aid. Multiple Regression model analysis was used to fulfill the equation below:

$Y = f(X_1, X_{2,} X_{3,} X_4, X_5)$ ……..3.11

Where:

Y is Economic Growth

X_1 is Loans from China

X_2 is Foreign Direct Investment from China

X_3 is Foreign Aid from China

X_4 is Inflation rate in Kenya

X_5 is Government expenditure

The equation becomes;

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$ ……..3.12

α is a constant

ε is the error term

The study used multiple regression model. The adoption of this model as predictive analysis is justified in that it expounds the relationship between a continuous dependent variable and two or more independent variables. Further the model can be used to measure the strength of the effect the independent variable has on the dependent variable, to forecast effect of changes and to get point estimates.

3.5 Definitions and Measurement of Variables

Economic Growth: It is the capacity of an economy to increase the production of goods and services in comparison to different periods of time. In this study the economic growth was measured as annual percentage increase in GPD for sixteen years (2000-2015).

Loans: This is temporary provisions of money from outside the country that is to be paid back at agreed terms and conditions. According to World Bank (2015), external debt is part of the total debt in a country that is owed to creditors outside the country payable in foreign currency, goods or services. The data was from 2000 to 2015 and measured in Kenya Shillings as a percentage of GDP.

Foreign Direct Investment: It is a venture undertaken by a company or entity located in a country, into a company or entity based in another country. FDI is analyzed in terms of inflow of new equity capital (change in foreign share capital); re- invested earning (unremitted profit), trade and supplier's credit, net inflow of borrowing and other obligations from the parent company or its affiliates (Nwankwo et al, 2013). The units of measurement used were Kenya Shillings for the last sixteen years as a percentage of GDP.

Foreign Aid: It is the international transfer of capital, goods, or services from a country or international organization to benefit the recipient country or its population. It is an aggregate of several categories which include: balance of payments, technical collaboration, relief on debt and philanthropic aid among others. Data from 2000 to 2015 was measured in Kenya Shillings as a percentage of GDP.

Inflation Rate and Government Expenditure: These two variables were used as control variables in the equation. Data from the National Treasury of Kenya was used from 2000 to 2015 measured in Kenya Shillings as a percentage of GDP.

3.6 Data Type and Source

The study used secondary quarterly data for a period of 16 years beginning 2000 to 2015, sourced from: MOFCOM, NTK, World Bank, UNCTAD, and KNBS.

3.7 Time Series Properties

The study aimed at establishing whether the four components or factors (trend, seasonal, cyclical, and irregular) of time series exist and more specifically the trend component (long-run increase or decrease in a time series) and whether there is a very strong positive or negative trend, as economic growth have risen consistently over this period. Before estimation, time series trend components were checked and tested for all variables.

3.8 Data Analysis

The study adopted multiple regression analysis, which is commonly used when examining relationships of an economic nature. The study utilized the multiple regression technique in order to identify and approximate the relationship between the independent variables and the dependent variable. The analyzed data showed the effect of the Foreign Loans, Aid and FDI on the economic growth using Kenya Inflation rate and Kenya government expenditure as control variables.

3.8 Diagnostic Test

The study tested the element of multicollinearity, linearity and homoscedasticity between the independent variables (Chinese Loans, Chinese FDI, Chinese Aid, Inflation Rate and Government Expenditure) and dependent variable (Economic Growth).

CHAPTER FOUR

EMPIRICAL FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter comprises of discussion and interpretation of data characteristics using descriptive statistics, model estimation and analytical findings. Empirical findings are presented in line with the research objectives.

4.2 Data Characteristics

4.2.1 Data Sources

Quarterly data was of 16 years (2000 to 2015) was used in this study. The data was sourced from Ministry of Commerce China, World Bank, United Nations Conference on Trade and Development, and Kenya National Bureau of Statistics. The extracted data included China's Loans, FDI and Aid to Kenya; Kenya's GDP, Inflation and Government spending.

4.2.2 Descriptive Statistics

Table 4.1: Descriptive Statistics for the Study Variables, 2000 to 2015

Variable	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness
GDP	129	308	186.82	39.315	1545.684	.372
Loan	7	310	157.94	97.534	9512.809	-.289
FDI	5	307	124.72	89.588	8026.047	.560
Aid	1	305	36.34	38.256	1463.540	5.555
Inflation	62	309	195.31	85.705	7345.341	-.186
Expenditure	95	306	197.75	77.182	5957.001	-.065
Observations	64	64	64	64	64	64

Source: Author's Calculations (2018)

Data of Sixty four quarters was analysed which included China's Loans, FDI and Aid to Kenya; Kenya's GDP, Inflation and Government Spending.

From Table 4.1, the average for the GDP and loan was 186.82 and 157.94 respectively. FDI and Foreign aid had averages of 124.72 and 36.34. Inflation and expenditure had higher means of 195.31 and 197.75 respectively.

Standard deviation is a measurement of the distribution of variables from their mean. The standard deviations are: GDP 39.315, loan 97.534, FDI 89.588, Aid 38.256, inflation 85.705 and government expenditure 77.182. Since the distribution of the standard deviation is less than the mean thus the specific measurements are not spread out far from the mean. The conclusion is that there are no outliers in the data.

The range of the data varies per variable. The variables have a maximum of 308 GDP, 310 loan, 307 FDI, 305 AID, 309 Inflation and 306 Expenditures. The maximums of the variables are all with the same range. The minimums are: GDP 129, Loan 7, FDI 5, Aid 1, Inflation 62 and Government Expenditure 95. This shows that Kenya has not been receiving Loan, FDI and Aid at the same rate and time over the sixteen years observed. Notably GDP and Government expenditure do not show as huge a range as the other variables indicative that their growth has not been incremental over the sixteen years.

The observations indicate that the data is skewed to the left, that is, Loans -.289, Inflation -0.186, Government expenditure -0.065, with FDI and Aid being on the right hand side at .560 and 5.55 respectively.

4.3 Diagnostic Test Results

Before estimation of regression the data was first tested for Multicollinearity, homoscedaticity, and linearity. The tests that were carried out on the data to ensure the integrity of the results are discussed herewith.

Linearity of data was tested among the variables. Linearity is used to test the strength of the relationship between the variables in the study. The results were indicative that the relationship between GDP and Aid and GDP and Expenditure is strong while that of GDP and Loan, GDP and FDI and GDP and inflation have moderate strength in their relationship. Refer to Appendix A6 & A7.

The other test on the data was multicollinearity which is characterized by two measures, tolerance and VIF (Variance Inflation Factor). The tolerance should always be above 0.2, while VIF must not exceed 3. Each independent variable must be forced into becoming a dependent variable and testing it against the other explanatory variables. The main aim is to diagnose if collinearity exist and if so correct it. From the study all the independent variables were forced into dependent variable, and all tested negative for multicollinearity. The variables had tolerance of 0.2 and above, while VIF for all was below 3, as shown in appendices A1 to A5. The data had no multicollinearity

The final test was homoscedasticity, where a scatter plot (graph) was generated, with x axis being ZPRED and the y axis being ZPRESID. All the regression standardized predicted values were evenly distributed on the scatter plot. From the plot the data was normally and therefore all the data qualified to generate the model. Refer to Appendix A8

4.4 Empirical Results

The multiple regression model was extracted as highlighted below:

$$Y = 5.102 - 0.016x_1 + 0.306x_2 + 0.839x_3 + 0.016x_4 + 0.518x_5 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.1$$

The model is describing the relationship between GDP and other independent variables (Chinese Loan, Chinese FDI and Chinese Aid) and also the evaluation of controlling variables (government expenditure and inflation rate).

There was a negative effect of Chinese loans on GDP of -0.016 (-1.6%) and a positive effect on both Chinese FDI and Chinese Aid of 0.306 (30.6%) and 0.839 (83.9%) on GDP. For the controlling variables, expenditure is a preferred controlling variable as compared to inflation with an effect of 0.518 (51.8%) as compared to 0.016 (1.6%).

Table 4.2 Regression Results

Variable	Coefficient	Std Error	t-Statistic	Sig
Constant	5.102	2.552	1.999	.050
Loan	-.016	.049	-.015	.749
FDI	.306	.062	4.937	.000
Aid	.839	.101	8.326	.000
Inflation	.016	.046	.338	.737
Expenditure	.518	0.277	1.871	.066
R	.942[a]	Prob (F statistic)	0.000	
R Squared	.887			
Adjusted R squared	.878			
F Statistic	92.691			
Durbin Watson	.603			

Source: Author's Computations (2018)

The coefficient of determination R which discusses the variation between the dependent variable (Kenya's economic growth; which is measured GDP) and the independent variables (China Kenya's bilateral relations) measured by China's: Loan, FDI and Aid. Table 4.2 above shows that the adjusted R = 0.878, meaning that 87.8% of Kenya's economic growth is attributed to its bilateral relation with China with a 94.2% confidence interval.

The correlation coefficient R squared .887, is further indication that 88.7% of China's: loans, FDI and Aid have contributed to Kenya's economic growth; which indeed is the relationship between independent and dependent variable. The study has established a positive relationship of the dependent and independent variables at 94.2% confidence level of interval. Other factors that would be directly linked to the change of Kenya's economic growth

counted for 6% as represented by the standard error. The F-test value of 92.691 with probability of 0.0000 at 5% significant level shows that all the variables were jointly significant in determining economic growth in Kenya. The Durbin Watson of .603 implies the presence of autocorrelation, meaning the data was correlational.

4.4.1 Effect of loan on Economic Growth

The first objective of the study was to establish the effect of loans from China on Kenya's economic growth. This was achieved by estimating a liner multiple regression equation where Chinese loans are an independent variable and GDP was the dependent variable. The t statistic for the equation was -.015 which is indicative that the effect of Chinese loans on Kenyan economic growth is insignificant.

From the analysis loan had a negative effect on economic growth of -0.016. This means the higher the loan Kenya receives from China the lower the rate of economic growth. The coefficient is statistically insignificant and thus borrowing more or less from the Chinese government does not effect the economic growth in Kenya. This is because the effect of Chinese loans may not be felt immediately since these loans are channeled into capital budgeting investments whose returns may take longer to be recovered as affirmed by Hassan *et al*, (2005) , they established that there is a negative and insignificant effect on economic growth from loans.

This finding was in line with the researcher's expectation of the study. It however was not in line with research done in the past on the effect of total debt on Kenya's economic growth. Mageto (2015) found that public debt led to economic growth and increased investments. This presents an area where further research is required into what are the specific terms and conditions of Chinese loans to Kenya.

4.4.2 Effect of FDI on Economic Growth

The second objective of the study was to establish the effect of Foreign Direct Investment from China on Kenya's economic growth. This was achieved by estimating a liner multiple regression equation where Chinese Foreign Direct Investment is an independent variable and GDP was the dependent variable.

The relationship between Chinese FDI and economic growth from the analysis of the model was positive. This is concluded from the t statistic that has a value of 4.937. This significance indicates that Chinese FDI is an important factor that contributes to economic growth in Kenya.

An increase in inflows of Chinese FDI to Kenya results in an increase or growth of Kenya's economy. The FDI coefficient was .306 which translates 30.6% increase in economic growth, attributable to FDI from China. Companies investing in Kenya through FDI, are able to pay taxes to the government, a year after the commencement of business; theses taxes go along in effecting the economic growth. Due to the short duration that these companies take to break even and start multiple investments the returns are felt quicker which contributes to Kenya's economic growth. Tax from the companies is revenue, which further becomes part of the government expenditure. In this study expenditure was used as controlling variable.

This finding was in line with the researcher's expectation of the study. The results were also in agreement with study done by (Maranga, 2015) on FDI, International Trade and Economic growth a case study of Kenya.

4.4.3 Effect of Aid on Economic Growth

The third objective of the study was to establish the effect of foreign aid from China on Kenya's economic growth. This was achieved by estimating a liner multiple regression equation where Chinese foreign aid is an independent variable and GDP was the dependent variable.

The study revealed that the effect of aid on economic growth in Kenya is positive. It further revealed that the positive effect of Chinese aid on economic growth is significant at 95 per cent significance levels. The t statistic was found to be 8.326 which demonstrates that aid is significant in economic growth of Kenya. This is because aid is directed to sectors such health and education, where the effect is felt almost immediately; taking case the education sector, where a student receives a scholarship and after the duration of study they are able to be gainfully employed thereby joining the working force of Kenya which contributes to human capital that is a factor of economic growth. These results were further supported by (Ojiambo, 2014) on the effects of aid on economic growth of Kenya which were positive and significant

Inflation and government expenditure were also both positively linked to economic growth with the coefficients being .016 and .518 respectively. However, the effect of the two on economic growth is insignificant as shown by the results at a 5 per cent significance level.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, the conclusion of the study based on the results. The recommendations anchored on the policy implication and finally suggestion for further research.

5.2 Summary

The main objective of this study was to determine the effect of Kenya's bilateral relations with China on economic growth in Kenya. To achieve this objective, Chinese Loans, Chinese Foreign Direct Investment and Chinese AID to Kenya, were used to assess the effect on Kenya's economic growth which was measured by GDP. Further the study adopted two controlling variables; Kenya's inflation and government expenditure. Sixteen years data (2000 – 2015) for the above variables was collected, tested for linearity and analysed using multiple regression.

It is the assumption of many that when nations come together, progress is expected and so is the case of bilateral relations. In this study Chinese government has been advancing Loans, FDI and Aid to Kenya for years. Seeking the effect of these variables to Kenya's GDP motivated this study. Each independent variable was analysed and outcome was as follows.

The most significant variable effecting the economic growth as per this study is Aid followed by FDI, while the other factor loan, had insignificant statistical effect on the Kenya's economic growth. Taking a look at Chinese Aid, Kenya had not been receiving much Aid in the past from China, but from the year 2007 onwards, China has given Kenya substantial amounts of Aid. With this short duration of receivership of aid, Kenyan economic growth has grown exponentially. This significant growth is attributed to the recent political regimes

which saw Kenya turn to China for assistance when some of the current partners demanded more accountability than it could offer.

FDI from China has also contributed significantly to Kenya's economic growth. The study determined that Kenya has consistently been on the receiving end and accepting of direct courting investments from Chinese firms. This was not so in the years before 2000, as compared to recent years where Kenya witnessed increase of China's firms grounding their heavy network in Kenya. This has fostered the economic growth significantly.

As Kenya and China continue to strengthen their bilateral relations more Aid and FDI, are expected; which indeed foster Kenya's economic. The other independent variable Chinese loans didn't have any statistical significant effect on Kenya's economic growth. The selected controlling variables; Kenya's inflation and government expenditures, also didn't have any significant effect.

5.3 Conclusion

The study presented that Chinese Aid and FDI is important to Kenya's economic growth while Chinese loans are detrimental on economic growth. Kenya should thus find new ways and methods of addressing the two key areas of China's Bilateral relations and encouraging the directing of Aid and FDI to herself. Kenya should rely more on Aid and FDI to increase its economic growth and deter from loans as they do not seem to have any significant effect on the economic growth.

5.4 Policy Recommendations

Receiving aid for Kenya may seem as a good way to accelerate economic growth as the country is not required to pay back the aid. However, past relations with other bilateral relations for Kenya have seen the countries try to use the aid offered to influence sectors of the government and political reach. Kenya therefore needs to develop a comprehensive policy to govern its aid relations with China to safe guard from any such positions in the future.

Chinese FDI not only increases economic growth but also work in raising the living standards of the Kenya people and bring innovation to the country. For this to fully have effect the Kenyan government must ensure that its FDI policy with China ensures that a specific proportion of workers in the companies are local hires and further not only in entry level jobs but also in senior management positions. Where training is necessary for that the policy should provide for it as well.

5.5 Suggestion for Further Research

The study focused only on Kenya's China bilateral relations, a cross sectional study on other nations in which Kenya has bilateral relations can also be assessed. Bilateral relation components go beyond the loan, FDI and Aid and therefore it necessary for other studies to focus on other components. Assessment on sustainability of economic growth as a result of bilateral relation is also a topic of discussion, into which research can engage. Finally, relationships between nations may at times land at standoffs, which can happen to Kenya China relation. Studies on strengthening and mitigating standoffs within bilateral relations is an area for further study.

REFERENCES

Abala, D. (2014) Foreign Direct Investment and Economic Growth: An empirical analysis of Kenyan daa. DBA Africa Management Review Vol4 (1) pg 62-83

Amuedo-Dorantes, Catalina, and Susan Pozo. 2004. "Workers' Remittances and the Real Exchange Rate: A Paradox of Gifts." World Development 32, no. 8: 1407–17.

Barajas, Adolfo; Ralph Chami; Connel Fullenkamp; Michael Gapen; and Peter Montiel. 2009. "Do Workers' Remittances Promote Economic Growth?" IMF Working Paper no. WP/09/153. Washington, D.C.: International Monetary Fund.

Bold, M. (2001). Retrieved April 9, 2003, from University of North Texas Center for Parent

Borensztein, E., J. Gregorio, & J. Lee (1998). How does foreign direct investment affect growth? Journal of International Economics, 45, 115-35.

Broadman, Harry G., Gozde Isik, Sonia Plaza, Xiao Ye and Yutaka Yoshino (2006), Africa's Silk Road: China and India's New Economic Frontier (Washington, DC: World Bank).

Business in Africa (2006), 'Unpacking Africa's Great Asian Opportunity', Business in Africa, May (Nairobi).

Catrinescu, Natalia; Miguel Leon-Ledesma; Matloob Piracha; and Bryce Quillin. 2006. "Remittances, Institutions and Economic Growth." IZA Discussion Papers no. 2139. Bonn: Institute for the Study of Labor.

Chami, Ralph; Adolfo Barajas; Thomas Cosimano; Connel Fullenkamp; Michael Gapen; and Peter Montiel. 2008. "Macroeconomic Consequences of Remittances." IMF Occasional Paper no. 259. Washington, D.C.: International Monetary Fund.

Chami, Ralph; Connel Fullenkamp; and Jahjah Samir. 2005. "Are Immigrant Remittance Flows a Source of Capital for Development?" IMF Staff Papers 52, no. 1: 55– 81.

Chen, G., Geiger, M., and Mingui Fui,"Manufacturing FDI in Sub-Saharan Africa: Trends, Determinants, and Impact" World Bank Working Paper, June 2015

Chenery, H. B., and Bruno, M. (1962). Development Alternatives in an Open Economy: The Case of Israel. *Economic Journal*, 72, pp. 79-103.

Chenery, H., and Strout, A. (1966). Foreign Assistance and Economic Development. *American Economic Review*, Vol. 66. No.4, pp. 679-733.

Clements, B., Bhattarcharya, R. and Nguyen, T.Q. (2003). "External Debt, Public Investment and Growth in Low Income Countries". *IMF Working Paper No. 03/249.*

Creswell, J. (2002). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Upper Saddle River, NJ: Merrill Prentice Hall.

David Ricardo. *The Principles of Political Economy and Taxation.* Homewood, IL: Irwin, 1963.

Dunning, J. H. (1993), "The eclectic (OLI) paradigm of international production: Past, present and future", International Journal of the Economics and Business, 8(2): 173-190.

European Scientific Journal July 2013 edition vol.9, No.19 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431)

Enkanayake E.M & Dasha C. (2009) "The effect of foreign aid on economic growth in developing countries" Journal of International Business and Cultural Studies pg 1-13

Feenstra, R. and Gordon, H. 2005. "Ownership and Control in Outsourcing to China: Estimating the Property-Rights Theory of the Firm,"

Fiott, D., "The EU and China in Africa: the case of Kenya", Madariaga Paper, Vol. 3 No. 5, July 2015

Gandolfo G. (1998). International Trade Theory and Policy, 544 pp. Berlin Heidelberg New York: Springer

Gandolfo G. (2001). *International Finance and Open-Economy Macroeconomics*, 613 pp. Berlin Heidelberg New York:

Geda, A. (2006) 'The Impact of China and India on Africa: Trade, FDI and the African Manufacturing Sector*', African Economic Research Consortium, Nairobi, Kenya.*

Godfrey and Cyrus (2012) The Impact of external debt on economic growth and private investments in Kenya and External Debt and growth. IMF Working Paper 02/69, Econ. J, 39:1-7IMF

Government of Kenya (Various issues), Statistical Abstracts (Nairobi: Government Printer).

Hausmann, R. & A. Fernandez-Arias (2000). Foreign direct investment: Good cholesterol? Inter-American Development Bank Working Paper No. 417, Washington.

Hassan, M. Hager, H. Haj, M. (2005) "Impact of loans on economic growth" Journal of Economics and Economic Education Research Vol 6, Issue 2

Heckscher E. and B. Ohlin (1991). Heckscher-Ohlin Trade Theory, edited by H. Flam and M. June Flanders, 234 pp. Cambridge, USA: MIT Press.

Himbara, David (1994), Kenyan Capitalists, the State and Development (Nairobi: East African Educational Publishers).

Ijirshar, V. Muhammad, L. (2015) "Empirical Analysis of the relationship between Foreign Direct Investment and Economic Growth in Developing Countries- Evidence from Nigeria" International Journal Of Emerging Technology and Advanced Engineering Volume 5, Special Issue 6

Indian Technical and Economic Cooperation Division (2007), 'A Note on Indian Technical and Economic Cooperation (ITEC)', http://itec.nic.in/about.htm, last accessed 16 March 2017.

Jenkins, Rhys and Chris Edwards (2005), The Effect of China and India's Growth and Trade Liberalization on Poverty in Africa, Final Report (London: DfID).

Kaplinsky, Raphael and Mike Morris (2006), 'The Asian Drivers and SSA: MFA Quota Removal and the Portents for African Industrialization', Paper presented to a workshop on Asian and other Drivers of Change, St. Petersburg, 18–19 January 2006.

Kaplinsky, Raphael, Dorothy McCormick and Mike Morris (2007), 'The Impact of China on Sub Saharan Africa', IDS Working Paper No. 291, Brighton: Institute of Development Studies.

Karras, G. (2006). Foreign Aid and Long-run Economic Growth: Empirical Evidence for a Panel of Developing Countries. Journal of International Development, vol.18, no.7, pp.15–28.

King, K. (2010). "China's cooperation in education and training with Kenya: A different model?" International Journal of Educational Development, 30(5), 488-496

Krugman, P., Obstfeld, M., & Melitz, Marc. (2012). International Economics theory & policy. United states of America: Pearson Education, Inc

Leedy, P. & Ormrod, J. (2001). Practical research: Planning and design (7th ed.). Upper Saddle River, NJ: Merrill Prentice Hall. Thousand Oaks: SAGE Publications.

Maingi J (2010) The Impact of Government Expenditure on Economic Growth in Kenya 1963- 2008, Kenyatta University

Mageto J (2015) Public Debt and Economic Growth in Kenya. Kenyatta University

Mansoor, Ali, and Bryce Quillin, eds. 2006. Migration and Remittances: Eastern Europe and the Former Soviet Union. Washington, D.C.: World Bank.

Maranga J (2015) Foreign Direct Investment, International Trade and Economic Growth in Kenya. Kenyatta Universty

Moyo, D. (2009) Dead Aid: Why is aid not working and how there is a better way for Africa. Penguin books limited

Ministry of Commerce China 2014. "China's Africa Policy" Beijing.

Ministry of Commerce China 2015. "China's Africa Policy" Beijing.

Moriera, S.B. (2005) "Evaluating impact of foreign aid on economic growth: A cross country study" Journal of Economic Development Vol 30 No2 Pg 25-50

Mosley, P. (1980). Aid, Savings and Growth Revisited. *Oxford Bulletin of Economics and Statistics*, Vol. 42 (2), pp. 79-95.

Mosley, P., Hudson, J., and Horrell, S. (1987). Aid, the Public Sector and the Market in Less Developed Countries. *Economic Journal*, Vol. 97 No. 388, pp. 616-41.

Mugendi, F. (2011) Kenya-Sino Economic relations:The Impact of Chinese Investment in Kenya's Transport Sector. University of Nairobi

Myers, S. C. (1977): Determinants of Corporate Borrowing, Journal of Financial Economics, 5, 147-175.

Ojiambo V. (2014) Effects of foreign aid predictability on investment and economic growth in Kenya, Kenyatta University

Paul Samuelson. "International Trade and the Equalisation of Factor Prices." *Economic Journal* 58(1948), pp. 163–184.

Radelet, S. (2006). A Primer on Foreign Aid. *Working Paper* No 92. Washington, Center for Global Development.

Rajan, Raghuram, and Arvind Subramanian. 2005. "What Undermines Aid's Impact on Growth?" IMF Working Paper no. WP/05/126. Washington, D.C.: International Monetary Fund

Ronald W. Jones. "Factor Proportions and the Heckscher-Ohlin Theorem." *Review of Economic Studies* 24 (1956), pp. 1–10.

Ronald W. Jones. "The Structure of Simple General Equilibrium Models." *Journal of Political Economy* 73 (December 1965), pp. 557–572.

Rosenstein-Rodan, P. N. (1961). International Aid for Underdeveloped Countries. *Review of Economics and Statistics*, 43 (May), pp. 107-48.

Rudiger Dornbusch, Stanley Fischer, and Paul Samuelson. "Comparative Advantage, Trade and Payments in a Ricardian Model with a Continuum of Goods." *American Economic Review* 67 (December 1977), pp. 823–839.

Smith, A. (1937). The wealth of Nations, edited in 2008, Wilder Publications.

Sornarajah, M, (2004). The International Law on foreign Investment, Cambridge University Press, Cambridge

Stephen Golub and Chang-Tai Hsieh. "Classical Ricardian Theory of Comparative Advantage Revisited." *Review of International Economics* 8(2), 2000, pp. 221–234.

Uneze E. (2011): Foreign aid and the real exchange rate in the West African economic and monetary union (WAEMU).

United Nations Conference on Trade and Development, How to Attract and Benefit from FDI in Small Countries: Lessons from Estonia and Jamaica (2011)

United Nations Conference on Trade and Development, Report on the implementation of the investment policy review (2013)

United Nations Conference on Trade and Development, A Practical Guide to Trade Policy Analysis (2015)

Zafar, Ali. 2007. "The Growing Relationship between China and Sub-Saharan Africa: Macroeconomic, Trade, Investment, and Aid Links." *World Bank Research Observer* 22 (1): 103–30.

https://www.centralbank.go.ke,2015

http://www.treasury.go.ke, 2015

APPENDICES

Appendix A1: Loan as Dependent Variable

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	FDI	.596	1.678
	AID	.364	2.750
	INFLATION	.945	1.058
	EXPENDUTRE	.455	2.196

Appendix A2: FDI as Dependent Variable

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	AID	.439	2.280
	INFLATION	.909	1.100
	EXPENDUTRE	.426	2.349
	LOAN	.883	1.132

Appendix A3: AID as Dependent Variable

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	INFLATION	.930	1.076
	EXPENDUTRE	.668	1.497
	LOAN	.890	1.124
	FDI	.724	1.381

Appendix A4: Inflation as Dependent Variable

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	EXPENDUTRE	.421	2.377
	LOAN	.919	1.088
	FDI	.596	1.677
	AID	.370	2.706

Appendix A5: Expenditure as Dependent Variable

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	LOAN	.955	1.047
	FDI	.602	1.660
	AID	.573	1.746
	INFLATION	.907	1.102

Appendix A6: Case Processing Summary

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Residual Value for GDP	65	100.0%	0	0.0%	65	100.0%

Appendix A7: Linearity Test

Descriptives

			Statistic	Std. Error
Residual for GDP	Mean		.0000	.0000
	95% Confidence Interval for Mean	Lower Bound	.0000	
		Upper Bound	.0000	
	5% Trimmed Mean		.0000	
	Median		.0000	
	Variance		.000	
	Std. Deviation		.00000	
	Minimum		.00	
	Maximum		.00	
	Range		.00	
	Interquartile Range		.00	
	Skewness		.488	.297
	Kurtosis		25.702	.586

Appendix A8: Test for Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residual for GDP	.293	65	.000	.486	65	.000

Lilliefors Significance Correction

Appendix A9: Correlation

Correlations

		LOAN	FDI	AID	INFLATION	EXPENDITURE
LOAN	Pearson Correlation	1	.676**	.562**	-.056	.710**
	Sig. (2-tailed)		.000	.000	.661	.000
	N	64	64	64	64	64
FDI	Pearson Correlation	.676**	1	.892**	-.008	.951**
	Sig. (2-tailed)	.000		.000	.948	.000
	N	64	64	64	64	64
AID	Pearson Correlation	.562**	.892**	1	-.154	.898**
	Sig. (2-tailed)	.000	.000		.225	.000
	N	64	64	64	64	64
INFLATION	Pearson Correlation	-.056	-.008	-.154	1	-.009
	Sig. (2-tailed)	.661	.948	.225		.941
	N	64	64	64	64	64
EXPENDITURE	Pearson Correlation	.710**	.951**	.898**	-.009	1
	Sig. (2-tailed)	.000	.000	.000	.941	
	N	64	64	64	64	64

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

Appendix A10: Data

Bilateral Relations China and Kenya				
Years	**Loan**	**Aid**	**FDI**	**GDP % Growth**
2000	0.5	243	0.5	0.60
2001	6	438	0.64	3.78
2002	6	521	0.53	0.55
2003	0.3	631	0.74	2.93
2004	0.2	733	2.68	5.10
2005	0.1	926	2.05	5.91
2006	46	1054	0.18	6.47
2007	65	1527	8.90	6.85
2008	57	1841	23.23	0.23
2009	365	1948	28.12	3.31
2010	262	2062	101.22	8.40
2011	194	2523	68.17	6.11
2012	441	2678	78.73	4.55
2013	32	2815	230.54	5.69
2014	3730	2974	278.39	5.33
2015	1643	2986	281.81	5.65

Figures in US$D Millions