THE EFFECT OF FOREIGN DIRECT INVESTMENT ON LONG TERM GROWTH IN KENYA SERVICES AND AGRICULTURAL ECONOMIC SECTORS

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DECLARATION

This research paper is my original work and has never been presented for a degree award in any other university.

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Approval

This research paper has been submitted for examination with our approval as university **Supervisor:**

Signature……………………………………….　　　**Date ……………………………**

Laura Barasa

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DEDICATION

I dedicate this research paper to my family; Dad, Mum, David, Phyllis and Anne. Your support is

undeserving. May God continue to bless keep protect and guide your every step. May He satisfy

you with a long healthy and happy life.

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ACKNOWLEDGEMENT

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ACRONYMS & ABBREVIATIONS

COMESA	Common Market for East and Southern Africa
DI	Direct Investment
EAC	East Africa Community
FDI	Foreign Direct Investment
GMM	Gaussian Mixture Model
IMF	International Monetary Fund
KNBS	Kenya National Bureau of Statistics
OLS	Ordinary Least Squares
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
US	United States

ABSTRACT

This paper examined the impact total FDI stocks have on the growth of Kenya's services and agricultural sector. The study made used of time series data between 1980 and 2012. Augmented Dickey-Fuller test was used to test for stationarity and OLS and Dickey fuller tests were used to establish presence of cointegration. The relationship between FDI and sectoral growth was analyzed using OLS and analyzed using STATA software where data was presented in form of tables. The study findings were consistent with existing literature and theory concluding that FDI's impact in the services industry is positive and insignificant while its impact on agriculture is indifferent. Factors responsible for growth of service sector established were FDI though insignificantly, growth of both manufacturing and agricultural sectors. Growth of agricultural sector was attributed to growth of exports though insignificantly and the growth of both service and manufacturing sectors. It was recommended that FDI be encouraged since it has a positive impact established although insignificantly. Growth of sectors is also encouraged as they impact positively to encourage FDI-led growth.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter looks at the background to Foreign Direct Investment; the definition, the trends, the types and few empirical studies on FDI, it also looks at the service and agricultural sector as well as the investment climate of Kenya. The chapter will also cover the problem statement, research objectives, significance of the study and concludes with the limitations of the study.

1.1. Background

Foreign Direct Investment (FDI) is broadly defined as a control of ownership in a business enterprise in one country by an entity based in another country. The World Bank (1996) defines it is as the sum of equity capital, reinvestment of earnings and other capital by a foreigner having at least 10% control or having significant influence on the management of an enterprise in another country. FDI has been defined in the World Investment Report (2012) as the investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise of affiliate enterprise of foreign affiliate).

According to Narula and Dunning (1993) there are three main motives of FDI in the world's economy. The first type is the marketing seeking FDI which this kind of investment seeks to supply the host country with goods and services and to grow that market. This kind of FDI is based on the location advantage (market size and market growth ability). Secondly there is the

resource or asset seeking FDI which mainly focuses on countries with abundant natural resources such as oil and gas, minerals, raw materials or agricultural products. Thirdly there is the efficiency seeking FDI which looks into diversification of exports, great productivity and value.

FDI is an important source of capital for most economies especially developing countries. Singh and Zammit (2009) conclude that FDI has encouraged growth of host economies either by supplementing local capital or through technology and knowledge transfer. The researchers assert that FDI stimulates economic growth in the host country. Gorg and Strobl (2001) established that these foreign firms encourage productivity and growth rates in the industries they enter as well as promote skills upgrading, more employment and increased innovation. Alfaro (2003) notes that FDI can convey great advantages to host countries however the benefits vary greatly across sectors.

Several factors discourage FDI in an economy. In Kenya for instance, infrastructural, regulatory and security-related constraints prevent the Kenyan economy from realizing its potential (KPMG, 2012). A report by UNCTAD (2005) reveals these factors which include: government overregulation and inefficiency, expensive and irregular electricity and water supplies, underdeveloped telecommunication sector, poor transport infrastructure and high costs associated with crime and the general insecurity. In addition, the political instability and constant terrorist attacks have affected the country's investment.

1.1.1. FDI growth trends

FDI growth trends show FDI inflows grew in the 70s and 80s however from the 90s FDI inflows have been fluctuating. According to UNCTAD (2015) among the top five FDI recipients in the world, four are developing economies. These are China, Hong Kong, Singapore and Brazil with

India standing at position 15 of world's top 20 FDI hosts. The trend since 2008 has been fluctuating. For instance in 2009 it stood at US$ 1,171 billion dollar, in 2010 it stood at US$ 1,346 billion dollars, 2011 it stood at US $ 1,612 billion dollars. In the year 2012 if went down to US $1,324 billion and grew slightly to US $1,363 billion in 2013. In most recent times a report on the Global Investment Trends Monitors (2016) shows that Hong Kong China is the world's top FDI recipient overtaking the US who have dominated the position in years. Global FDI stands at USD 1,260 billion.

In the 1970s and 1980s Kenya attracted high FDI inflows in the country compared to its neighbours Uganda and Tanzania. Kenya would attract up to US$ 22 million per annum in average between 1981 and 1999, however this was still very low according to standards given to developing countries. This is observed by the fact that according to UNCTAD (2005) Kenya FDI stocks was 7.5% of GDP in 2003 while that of Africa in aggregate was 25.3% and 31.5% for developing countries. However, several factors such as political instability, infrastructural and regulatory constrains have made Kenya unattractive relative to its neighbours and given that Kenya's economy is the biggest. Between 2003 and 2009 Kenya's annual FDI flows average was US$ 106 million while that of Uganda was US$456 million and Tanzania's was US$521 million UNCTAD (2010). In per capita terms within the period 1996 and 2003 Kenya's figure stood at US $ 1.3 while developing countries the average was US $ 41 for the same period.

The graph below shows global FDI inflows by group of economies. The developed countries experienced a decrease in the inflows of FDI while developing countries experienced an increase in FDI inflows.
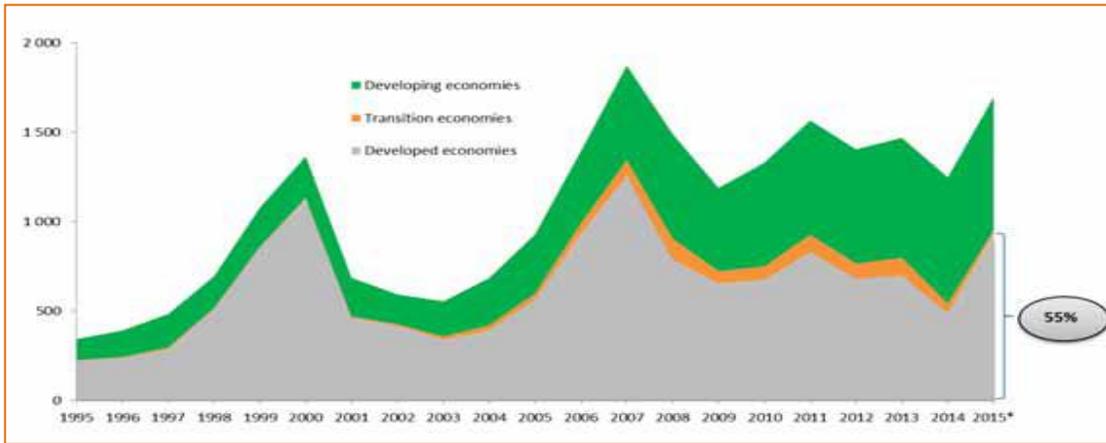
Figure 1: Global FDI inflows between 1995 and 2015 (in Billions of USD)

Source: UNCTAD 2016

The graph below shows FDI distribution by sector in both developing and developed countries in 2012. Most FDI inflows go to the services sector followed by manufacturing then agricultural sectors with other unspecified sectors such as telecommunication enjoying the least inflows.
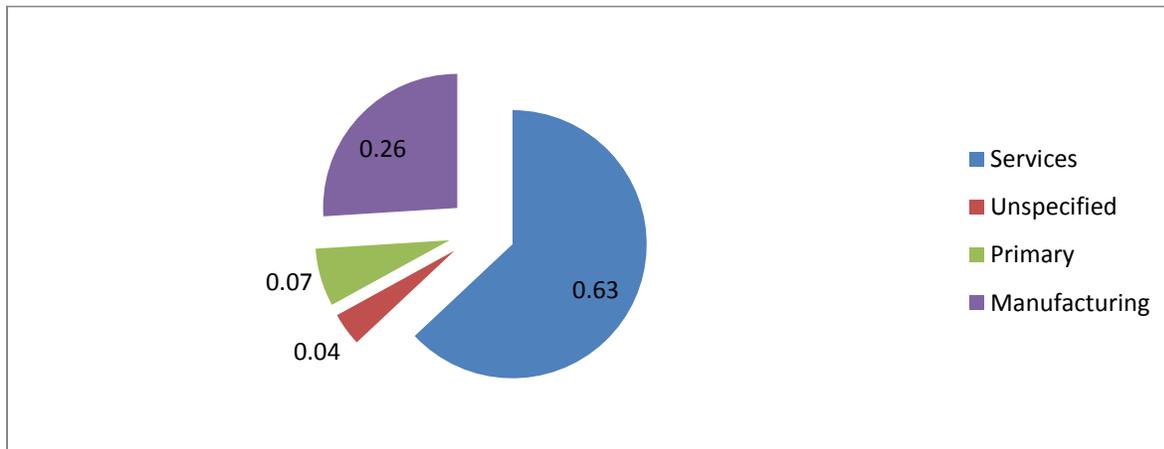
Figure 2: Global FDI distribution by sector in 2012

Source: Own

South Africa and Nigeria top the list of most attractive destinations in Africa, with new markets coming up such as Mozambique. Other countries have also emerged such as Ghana, Uganda and

Zambia. FDI focus has shifted from natural resource assets to technology, media and telecommunication (accounting for 50% of FDI inflows in 2013). FDI inflows to the Sub-Saharan Region trends show Uganda and Tanzania as the better favored nations in East Africa.
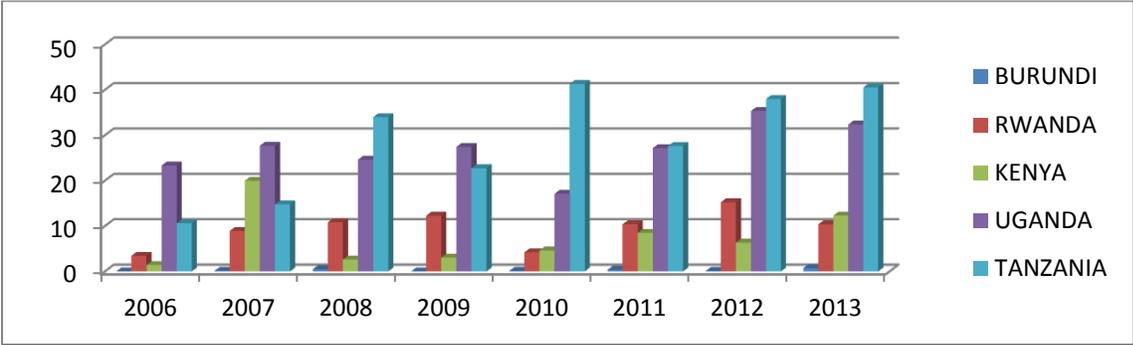
Figure 3: FDI per capita

Source: Own

The chart above shows distribution of FDI per capita for period between 2006 and 2013 within EAC member states.

1.1.2 Kenya agricultural sector

Agriculture offers food security to any economy in the world and is also a source of livelihood for a large population. The Agricultural Sector Development Strategy Report (2010) showed that the agricultural sector contributed 25% directly to GDP annually and another 26% indirectly, contributed to 65% of total exports from the country and provided informal employment up to 70% in the rural Kenya. More recent trends show that agriculture contributes about 30% to GDP, 80% to national employment which is mostly informal employment (Business Review, 2015). The sector is comprised of six main sub-sectors, these are crops, food crops, livestock, fisheries, horticulture and forestry and the main factors of production include land, water and institutions such as cooperatives. The major sub-sector is the horticulture sub-sector that contributes 33% to

agricultural GDP and 55% of agricultural exports. According to Hallam (2009) developing countries need to invest 83 billion dollars annually in order to meet the FAO (Food and Agriculture Organization) food requirements by 2050. However these countries have no capacity to do so since over the years commercial lending to agriculture by commercial banks have gone down, loans to boost agricultural sector by microfinance are unsustainable and at the same time aid directed to agriculture in these countries has gone down.

1.1.3. Kenya service sector

Economies tend to develop toward the development of industries and then to the service sector slowly moving from the over reliance of agriculture and mining sector a path followed by the UK. Developed countries are post-industrializing while developing countries are industrializing. Trends show industrializing countries like Kenya have their services sector growing faster compared to the rest of the economy. Growth of the services sector is dependent on the growth of the agricultural and industrial sectors through the forward and backward linkage. Currently, the service sector contribution to GDP stands at 60%, and has created 68% of formal jobs in Kenya. According to Kenya National Bureau of Statistics, KNBS (2015), the main contributors of services sector are real estate (8.9), tourism (11.8%), transport and communication and finance and insurance (7.4%). The World Bank (2015) reported that 72% of increased GDP between 2006 and 2013 was as a result of services According to a report by United States International Trade Commission (USITC) Executive Briefings on Trade (2014) Kenya produced $19 billion on services in 2012 which accounted for an estimated 43% of total EAC services output and in 2014 among the highest in Sub Saharan Africa.

1.1.4. EAC and Kenya investment climate

According to the U.S. Department of State (2015) on Kenya's Investment Climate Statement, Kenya investment climate is positive because of the stable monetary and fiscal conditions. Other factors that make Kenya attractive include its Mombasa port which is a major factor in trade within East Africa, strong telecommunications infrastructure, an established financial sector and aviation connections both within Africa and to Europe and Asia. Kenya is exposed to a large market through its membership to regional blocks such as EAC and COMESA. Inflation rates are stable (5-7%) with steady interest rates at 8.5. Major barriers to doing business in the country are mainly as a result of insecurities especially terrorism and corruption.

1.2. Statement of the Problem

Kenya has relied upon agriculture as the main contributor of its GDP for many years. New trends emerging show the service industry contributing more to GDP and employment. A report by the Overseas Development Institute (2014) reported that services sector and especially financial services, IT services, transport services and the tourism services are important to non-industrialized countries like Kenya since they contribute directly to GDP, exports and employment. Agricultural sector on the other hand offers employment to a majority of Kenyans as well as provides food security to economy.

FDI is a major source of capital for many countries, latest technologies, state of the art production facilities, wider and newer markets and new ideas of administration. Empirical studies have shown that FDI encourages economic growth of countries including Kenya. However, other studies have gone to show that the FDI's impact on the economy is more general and a look at the sectoral performance shows varied results for countries. Thus given the importance of the two sectors (Agricultural and services) in Kenya there is need to investigate

the impact total FDI has on these sectors and how sectoral variables impact on growth of the economy in order to achieve a sustainable growth in Kenya's economy.

1.3. Objectives of the Study

1.3.1 General objective

The main objective of this study is to establish the effect FDI has on the productivity and long term growth of the Kenyan sectoral performance.

1.3.2 Specific objectives

The specific objectives are:

1. To determine the relationship between FDI inflow and Kenya's agricultural sector growth.
2. To establish the impact of FDI inflow on Kenya's services sector growth.
3. To establish what policy areas need to be addressed in order to encourage FDI-induced growth in the Kenyan economy.

1.4. Significance of the study

The study's main purpose is to establish the impact FDI has on sectoral growth in Kenya specifically growth in the agricultural and service sector. It hopes to establish whether general FDI impacts positively or negatively or is neutral to the growth of these sectors. In addition the study looks at other variables that impact on the growth of these sectors. These variables may interact with FDI to influence growth of these sectors and at the same time these factors influence growth in FDI. Thus, it is hoped that the study will point out key issues in policy areas of FDI and growth of the respective sectors in Kenya. In addition, it is hoped that the finding will be a source of knowledge adding to literature on FDI and growth in Kenya. Given the scope of

the study, the study aims to provide a basis for further academic research and also other research done in the area of FDI and growth in Kenya.

1.5. Scope of the study

The study's aim is to establish the effects FDI has on the Economy of Kenya on the service and agricultural sector. The study is limited to the Service and Agricultural sectors of the Kenyan economy. In addition, the study will make use of time series data between the years 1980 and 2012.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This chapter looks at the theoretical framework, that is the theories associated with growth and FDI and an empirical framework which looks at what has been done before by other researchers. It concludes with an overview of literature which is the gap the researcher hopes to fill in literature.

2.1. Theoretical Review

2.1.1. Theories of growth

2.1.1.1. Neoclassical growth theory

This theory was as a result of the weaknesses of the classical growth model (Harrod-Domar) which assumed labour and capital to fixed proportions. Proposed by Solow (1956) and Swan (1956) the model seeks to find solution to long run economic growth. The model assumes constant returns to scale, positive and diminishing returns and inada conditions in a closed economy. Production is as a result of unlimited substitution of labour and capital. Solow further enhanced the model by introducing technological progress within the model for purposes of explaining growth in the presence of diminishing returns in the factors of production.

2.1.1.2. Endogenous Economic Growth Models

These new growth models were proposed to explain long run growth. Neoclassical models failed to explain this kind of growth; theoretically they assumed technological progress was exogenous, it assumed that technological progress was free and didn't explain purposive investment under perfect competition. However the endogenous models explain the technological progress is

determined within the model of growth, mores so, the models explain that technology comes at a cost for instance through patent protection and secrecy. Under imperfect competition the new models explain purposive investment to enhance growth of technology through research and development. Several models within the Endogenous model have been proposed:

2.1.1.3. The AK model

This model is the same as the neo classical model with absence of diminishing returns. Hence human capital, physical capital accumulation and intellectual capital are all accumulated over time. Aghion et al (1992) establish that there is no difference between capital accumulation and technological progress.

2.1.1.4. Product variety model

The model is based growth on innovation as proposed by Romer (1990). New products and technology are as a result of innovation. Specialization within an economy enables new intermediate products, brings improvement in human productivity and physical capital as well as enables technology spillover through FDI in an economy. This specialization which increases economic productivity can be enhanced by directing more Human capital to Research and Development. Growth within an economy can be increased through product variety.

2.1.1.5. The Schumpeterian model

Proposed by Howitt and Aghion (2009) the theory also concentrates on Research and Development (R&D) for new products. Unlike the Product Variety Model this theory is keen on quality improvement rather than innovation. Thus countries with advanced R&D and innovation attract new technologies through FDI leading to productivity and thus growth as a result of spillover effect.

2.1.2. Theories for FDI

2.1.2.1. Electric paradigm to FDI of OLI paradigm

This theory combines oligopolistic and internalization theory and then adds the location dimension to explain why a firm opens a foreign branch. It looks at who produces what (goods and services), where and why they do so. Dunning (1979) observes that a firm will carry out FDI if these three conditions are fulfilled simultaneously: the ownership (O) advantage, location (L) advantage and internalization (I). Internalization on the other hand makes it more profitable to carry out transactions within the firm than to outsource. The major criticism of the Electric Paradigm theory is the many variables in play making it almost impractical.

2.1.2.2. Internalization theory of FDI

The theory looks at how MNCs are formed by focusing on imperfections in intermediate product markets. Coarse works provide the basis for this theory by offering an economic explanation of why individuals choose to form partnerships rather than enter into bilateral trade agreements. It was established transaction costs was the reason. Buckley and Casson (1976) theory was based on 3 tenets; that in an imperfect market firms will work towards maximizing profits. Secondly, to overcome competition, imperfect markets for intermediate products results into the creation of internal markets. Lastly, internalization results to MNCs. The theory focuses on the protection and the flow of knowledge. Firms would rather exploit the knowledge rather than license it to other firms which could be costly to them. On branch ends up using the output of another firm as its input what is otherwise called backward and forward integration.

2.1.2.3. FDI theory based on strength of currency

According to this theory the relative strength of currencies between host country and source matters whether FDI will take place or not. Source countries invest in countries with weaker currencies in order to take advantage of the differences in the market capitalization. This theory however doesn't explain direct investment in less developed countries characterized by highly imperfect or non-existent capital markets and regulated foreign exchange rates, investment between two developed countries that have currencies of equal strength and doesn't explain investment of a developing country (with weak currency) Multinational Corporation in a developed country (stronger currency).

2.1.2.4. Production cycle theory

This theory was proposed by Vernon (1996) who identifies the four stages of production cycle which are innovation, growth, maturity and decline. In the first stage, companies produce new innovative products for its local market and export any surplus serving markets abroad. Due to increased demand in the markets abroad the companies produce more and export taking advantage of the technology and international competitors. In this first stage as the product grows, the technology becomes exposed. Product imitation starts taking place. Due to completion these firms try manufacture in those countries in order to maintain their market share resulting in FDI. The theory fails to explain FDI arising even without possessing the technological advantage.

2.2 Empirical review

Sen (2011) examined the impact FDI has on the service sector using regression models and time series data from 1970 to 2008.The study concluded that services sector in India is propelled by FDI inflows and at the same time trade, transport, hotels and restaurants, storage and

communication subsectors are instrumental in the growth of services sector in India. Fernandes and Punor (2011) examined the impact of FDI inflows in producer service sectors on the total factor productivity (TFP) of Chilean manufacturing firms. Fixed effects instrumental variables regressions showed that forward linkages from FDI in services explain 7% of the observed increase in Chile's manufacturing users' TFP. The service FDI also nurtures innovation activities in manufacturing and offers opportunities for laggard firms to catch up with industry leaders.

Durnel (2012) used Ganger-causality and GMM (Gaussian Mixture Model) on time series data from 2000-2009 to investigate the effects of FDI in Turkey at sector level. The researcher followed neo-classical and new endogenous growth models and concluded FDI contributed positively to the overall growth rate. At sectoral level, the researcher established FDI benefited growth in the Manufacturing, Electricity, Gas and Water, Wholesale and Retail Trade sectors. One way causality from FDI to GDP was found. Saleena (2013) examined empirically the roll of FDI on service exports in India using time series data. The Granger Casualty test shows the cause and effect relationship between the two variables. It goes to show that FDI positively influences growth of the services export in the Indian economy. Additionally, there is the presence of unidirectional causality where FDI inflows influence the growth of the service exports. However, there is no causality running from the export to FDI inflows. Dwivedi and Badge (2013) studied the impact FDI inflow has on the services sector in India using correlation analyses which showed a positive and significant impact of FDI capital inflows on the Indian economy.

Imoudu (2012) in Nigeria investigated the relationship that existed given FDI and economic growth between 1980 and 2009 using vector error correlation methodology (VECM). The

findings show that FDI's impact in agriculture, mining, manufacturing and petroleum sectors is very minimal but with a promising future in the Telecom industry in the long run.

Doytch (2011) used data between 1985 and 2011 for 17 Asian countries to investigate growth implications of industrial level FDI especially on FDI in the services sectors. The study followed the classical growth theory. Using GMM estimator results show significant spillover effects from FDI in the Mining and services sectors to the overall economy. However, mining FDI negatively impacts on the service sector. The impact of Service FDI (especially the business services) is positive on the services economy and a negative impact on manufacturing sector. The manufacturing FDI has a positive effect on the Manufacturing sector although its effect in the aggregate growth is not visible. Djokoto (2011) examined causality between inward FDI flows and growth of Agriculture in Ghana using time series data from 1960-2008. The study showed that FDI does not Granger cause agricultural output growth, conversely, agricultural output growth does not Granger cause FDI into the sector. Pearson correlation coefficients showed positive but terribly insignificant (probability 94.7%) relationship.

Dwivedi and Badge (2013) empirically analyzed the role FDI inflows play on India's GDP for data between 2000 and 2012. The linear regression model concluded that FDI has a positive and significant impact on GDP (service). Puapan (2014) accessed the impact FDI has on Thailand's production sectors using time series data for period between 2005 and 2013. The OLS regression shows that FDI positively influences overall Thailand's economic growth. However sectoral analysis showed strong and positive FDI impact on five out of the nine sub-sectors (manufacturing, banking, wholesale and retail, agriculture and construction).

Ng'ang'a (2011) examined the effects of net FDI inflows on Kenya's economic growth using time series data between 1985 and 2011. The OLS regression showed FDI positively but insignificantly affects growth. Abala (2014) carried out a study to establish what factors mainly drive the real growth of GDP as well as the key drivers of FDI in Kenya by using stationary time series data from 1970 to 2010. Using OLS the researcher concluded that FDI is an important factor of economic growth as it is a great source of capital for investment.

2.3 Overview of literature

Studies revolving around FDI and growth vary around the world. While most have looked at the impact of aggregate FDI on GDP, others have looked at the impact of FDI on sectors and at the same time others have looked at sectoral FDI on growth (aggregate and sectoral). In recent times it has been a subject of concern to investigate the impact FDI has on specific sectors. In different countries and in different regions the impact on the specific sectors varies. This study will look at the impact the aggregate FDI has on the agricultural and services sectoral economy in Kenya. It is believed that this is the first time this kind of study will be done in this country and none other has been done before.

CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter will look at the model specification, the empirical model itself, definition and measurement of variables, how the model will be estimated and data types and sources.

3.1 Model specification

The main objective of this study was to establish the impact FDI has on agricultural sector GDP and services sector GDP in Kenya in terms of growth. To do so, the study followed Neo-classical growth model specifically developed by Solow (1956) where an increase in output can either be achieved through capital accumulation and technological progress. The study followed the works of Ng'ang'a (2011), Durnel (2012). The growth of sectoral GDP according to the theory is a function of FDI and other variables that affect the respective sectors. It follows a Cobb-Douglas production function where current output is a determined by current capital and labour stocks. To start with a basic Solow function is of the form:

$$Y = g(L, K) \hspace{5cm} 1$$

Where: Y – Is the growth of aggregate GDP, L- Represents Labour and K- Represents Capital.

Equation 1 above just like in theory suggests that technological progress is constant over time. However, this is not the case in reality. We thus introduce technological progress γ which caters for other factors other than Labour and Capital that induce growth. Thus:

$$Y = g(L, K, \gamma) \hspace{5cm} 2$$

Capital K is considered a combination of both domestic (DI) and foreign investments (FDI). Therefore according to Ng'ang'a (2011) capital becomes:

$$K = (DI, FDI) \qquad\qquad 3$$

Plugging equation 3 into equation 2 we obtain:

$$Y = g(L, DI, FDI, \gamma) \qquad\qquad 4$$

This can be presented as follows:

$$AGRI_{GDP} = g(L, DI, FDI, \gamma) \qquad\qquad 5$$

Where:

$AGRI_{GDP}$ Represents the growth of the agricultural sector, L- Represents Labour, K- Represents Capital and γ - Represents other factors that affect the growth of the agricultural sector

$$SERV_{GDP} = g(L, DI, FDI, \gamma) \qquad\qquad 6$$

Where: $SERV_{GDP}$ Represents growth of the services sector, L- Represents Labour, K- Represents Capital and γ - Represents other factors that affect the growth of the services sector.

3.2 Empirical Model

Studies go to show that FDI positively impacts on the growth of GDP. Empirical studies show how FDI impacts on sectoral performance, some showing positive effects others negative effects while others have shown ambiguous effects. It is assumed that FDI has effects on the growth of both agricultural and services sector in Kenya. In addition, these two sectors of the Kenya economy have other factors that determine their growth. Obtaining the logs and differentiating with respect to time gives us elasticities for the coefficients of the variables (equations 7 and 8)

$$lnY = lnL + lnDI + lnFDI + ln\gamma \qquad\qquad 7$$

$$y = \beta_0 + \beta_1 l + \beta_2 DI + \beta_3 FDI + \delta\gamma + \epsilon_t \qquad\qquad 8$$

Thus our two empirical models of study as followed by Ullah et al, Ng'ang'a, Abala are as follows:

$$agri = \beta_0 + \beta_{t1}l + \beta_{2t}di + \beta_{3t}fdi + \beta_{4t}inf + \beta_{5t}Exp + \beta_{6t}manf + \beta_{7t}Serv + \epsilon_t \qquad 9$$

$$serv = \beta_0 + \beta_1 l + \beta_2 di + \beta_3 fdi + \beta_{4t}inf + \beta_{5t}manf + \beta_{6t}lit + \beta_{7t}agri + \epsilon_t \qquad 10$$

Where:

Serv- represents the growth rate of services sector, *agri* is the growth rate of agricultural sector, *l* is labour growth rate , *I* is the annual inflation rate, *exp* is exports, *manf* is growth rate of manufacturing sector, *di* represents direct investment, *fdi* represents foreign direct investment, *lit*- literacy levels,

Where the **βs** represent the elasticities of the variables under study and the variables represent their growth rates. Our main focus is on the $\beta_3 s$, $\beta_5 s$, $\beta_6 s$ and $\beta_7 s$, that is establishing the impact FDI has on agricultural and services sector and also how FDI interacts with the variables to influence growth of the sectors.

3.3. Definition and Measurement of Variables

The variables under study are as follows:

Table 1: Variables and Measurement

VARIABLE NAME	MEASUREMENT	EXPECTED SIGN
Real labour growth	Annual (%) work force growth	-ve
Direct investment	Direct Investment measured as a ratio of GDP.	+ve
Foreign Direct Investment	FDI Stocks measured as a ratio to GDP	+ve for serv +ve or -ve for agri
Inflation	Annual inflation rate (%)	-ve
Exports	Exports of goods and services as a % of GDP	+ve
Literacy levels	Secondary school Gross Enrolment Ratio for both sexes (%) lagged once	-ve
Service sector growth	Value added service sector growth as a % of GDP as proxy variable of service sector growth	+ve

Manufacturing sector growth	Value added manufacturing sector growth as a % of GDP as proxy variable of manufacturing sector growth	+ve
Agricultural sector growth	Value added agricultural sector growth as a % of GDP as proxy variable of agricultural sector growth	+ve

3.4 Model Estimation

3.4.1. Test for Unit Root

The use of time series type of data in econometric analysis requires that we test for stationarity properties of variables. This study will employed Augmented Dickey-Fuller test for unit root. Hypothesis to be tested:

H_0: $\delta=0$ (Implying non-stationarity)

H_1: $\delta<0$ (Implying stationarity)

3.4.2. Test for Cointegration

A test for cointegration will then be carried out to establish the existence of a long run relationship between the independent variables and agricultural and service sector growth which are the dependent variables.

3.4.3. Coefficient Estimation

The coefficients were estimated using Ordinary Least Squares (OLS) which will look at the relationship between the dependent and independent variables.

3.5 Data types and Sources

The study made use of time series data dating from 1980 to 2012 to study the relationship between the variables. Time series analysis takes into account that data collected over time and could have autocorrelation, trend or seasonal variations what is known as internal structure which must be accounted for. Data sources will mainly depended on secondary sources which

were collected from UNCTAD database on FDI inward and outward flows and stocks, data on

DI, exports, literacy levels, labour, sectoral growth and inflation, was gathered from Republic of

Kenya Statistical Abstracts and economic surveys produced by KNBS (Kenya National Bureau

of Statistics) and Central Bank's annual economic reviews and World Bank database.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0. Introduction

This chapter gives descriptive statistics of the data variables, gives results of the unit root test and tests for cointegration as well as the results of the estimation of the variables

4.1. Descriptive Statistics

The table below gives a summary of variables used for this study. The mean value of agricultural, service and manufacturing sector growth is 1.07%, 1.85% of the GDP real growth. Mean FDI stocks as a percentage of GDP is 6.90 with a high of 12.08% and a low of 4.51%. Literacy levels which represent the Secondary schools GER as a percentage of the population of official secondary education age averaged at 43.23 percent. Exports as a percentage of GDP averaged at 25.21. The interaction between FDI and literacy levels as well as FDI and exports vary significantly.

Table 2: Summary of descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Inflation	12.99	8.95	1.55	45.98
Exports	25.21	4.55	19.82	38.9
FDI	6.9	1.42	4.51	12.08
Manufacturing growth	0.7	0.49	-0.15	1.75
Agricultural growth	1.07	0.68	-0.23	2.37
Services growth	1.85	1.22	-0.42	4.32
Direct Investment	18.34	1.74	15.39	21.39

Literacy Levels	43.23	10.13	29.26	67.64
Labour growth	3.71	13.14	-32.84	33.99

4.2. Unit Root Test

In order to obtain consistent and reliable results in time series data analysis, unit root test must be carried out to ensure data is stationary (free of cycles, random walks and trends or a combination of the three). Stationarity was tested using Augmented Dickey Fuller test and the table below shows a summary of the results. All variables with the exception of literacy levels were found to be stationary at 1% confidence level having taken care of any trends and drifts. Literacy levels was differenced and found to be stationary after first difference at % confidence interval.

Table 3: Results of Unit Root Test at levels

VARIABLE	Test Statistics	1% Critical Value	5% Critical Value	10% Critical Value	Inference
inflation	-3.311	-2.457	-1.697	-1.31	Stationary
Exports	-2.152	-2.457	-1.697	-1.31	Stationary
FDI	-2.304	-2.457	-1.697	-1.31	Stationary
Manufacturing growth	-3.301	-2.457	-1.697	-1.31	Stationary
Agricultural growth	-3.51	-2.457	-1.697	-1.31	Stationary
Service growth	-3.401	-2.457	-1.697	-1.31	Stationary
Direct investment	-2.509	-2.457	-1.697	-1.31	Stationary
Literacy levels	1.53	-2.457	-1.697	-1.31	Non-Stationary
Labour growth	-3.707	-2.457	-1.697	-1.31	Stationary

Table 4: Results of Unit root Test after first differencing

VARIABLE	Test Statistics	1% Critical Value	5% Critical Value	10% Critical Value	Inference
Literacy levels	-4.555	-2.462	-1.699	-1.311	I(1)

4.3. Cointegration Test

To establish whether there exists a long term relationship between the variables, data was regressed and the lagged values thus obtained were tested using Dickey Fuller Test for Unit root. The results show a long term relationship between variables as shown on the table below:

Table 5: Results establishing cointegration

		test statistic	1% critical value	5% critical value	10% critical value
Agricultural growth	z(t)	-3.478	-3.702	-2.98	-2.622
Service growth	z(t)	-3.417	-3.702	-2.98	-2.622

*** At 5% critical level

4.4. Model Estimation and Results

To establish the impact foreign direct investment has on the growth of the sectors, Ordinary Least Squares (OLS) was used. The results of the two models studied are explained below:

The growth of agricultural sector is negatively affected by inflation and labour but very insignificantly. Foreign direct investment, direct investment and exports have a positive but insignificant effect on the growth of agriculture sector. In theory it is expected that presence of inflation in an economy will negatively affect growth. The negative effect of labour could be as a result of high unemployment rates within the labour force however in this case the impact is insignificant. Impact of growth of manufacturing and services sectors on growth of agricultural sector is positive and significant and consistent with existing theory and literature. The impact

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could be as a result of improved farming practices attributed to growth of industries that adds value to agricultural products, manufacture of farm inputs such as irrigation equipment, growth of marketing platforms such as the growth of social media, growth of banking and insurance. The results show that 93.10% of the explanatory variables explain the change in the dependent variable. The results are summarized in the table below:

Table 6: regressing the agricultural sector

Agricultural growth	Coefficient.	Standard error	t	P>|t|	
inflation	-0.0131454	0.0053999	-2.43	0.022	
exports	0.0160197	0.0106097	1.51	0.144	**Number of observations = 33**
FDI	0.0289825	0.0444611	0.65	0.52	**R-squared = 0.9461**
Manufacturing growth	0.8125785	0.5927145	1.37	0.183	**Adjusted R-squared = 0.9310**
Service growth	0.2173055	0.2345081	0.93	0.363	
Direct Investment	0.0011764	0.0231809	0.05	0.96	
Labour growth	-0.0032891	0.0034173	-0.96	0.345	
_cons	-0.3430052	0.4142739	-0.83	0.416	

A look at the impact FDI and other variables have on the growth of services sector, the following results were observed. Inflation, direct investment and lagged literacy levels have a negative insignificant effect on the growth of services sector. Labour and foreign direct investment has a positive but insignificant impact consistent with studies done such as Ullah et al (2012). Reason for the insignificant effect could be attributed to the fact that Kenya attracts very little foreign investment and the labour force within that period could have been highly unemployed. Agriculture and manufacturing sectors have positive and significant effect on the growth of

services sector as expected in literature. This could be attributed to the need for services to these sectors such as banking, marketing, insurance that could lead to the growth of services sector. The results are as shown in the table below.

Table 7: regressing the services sector

Service growth	Coefficient	Standard Error.	t	P>|t|	
Inflation	-0.005515	0.0041172	-1.34	0.193	
Direct Investment	-0.0230577	0.0171069	-1.35	0.19	
Labour growth	0.0059965	0.002205	2.72 0	0.012	**Number of observations = 32**
FDI	0.0555697	0.0272881	2.04 0	0.053	**R-squared = 0.9912**
Lagged Literacy levels	-0.0016606	0.0125737	-0.13	0.896	**Adjusted R-squared = 0.9886**
Agricultural growth	0.2527486	0.1470088	1.72	0.098	
Manufacturing growth	2.185641	0.2102408	10.4	0	
_Constant	0.1425657	0.3141711	0.45	0.654	

CHAPTER 5

SUMMARY CONCLUSION AND RECOMMENDATION

5.0. Introduction

This chapter gives a summary of the findings, makes a conclusion and gives recommendations based on the findings

5.1. Summary

The study's main aim was to establish the impact FDI has on the growth of agriculture and services sectors in Kenya and whether FDI induced growth in these sectors depends on growth of other sectors, literacy levels for services sector and exports for agricultural sector for the period between 1980 and 2012. Agricultural sector growth as well as service sector growth were the dependent variables with inflation rate, foreign direct investment stocks, direct investment, manufacturing sector growth and labour force growth as the explanatory variables with the addition of exports and services sector growth explaining growth of agricultural sector and literacy levels and agricultural sector growth explaining growth of services sector.

The impact of FDI on growth of the sectors is positive and insignificant in Kenya. Inflation in all cases is negative as expected although insignificant. Direct investment is positive and insignificant in the growth of agricultural sector showing either little government investment goes into the agricultural sector or what is allocated for agriculture is not utilized well for growth. On the other hand, direct investment to the services sector is negative and insignificant. The study shows growth in both sectors depends on growth of the key sectors of the economy. Services sector will grow with growth in both agricultural and manufacturing sectors and agricultural sector grows with growth in services and manufacturing sectors.

Growth of labour force positively impacts on growth of the services sector and negatively impacts on growth of agricultural sector insignificantly. Exports positively impacts on growth of agricultural sector but insignificantly showing Kenya's exports are still very low to influence growth. Literacy levels have a negative and insignificant effect on growth of services sector showing the country has more literate people who could be jobless or more and more people are becoming literate faster than the economy can absorb the population.

5.2. Conclusion

Foreign direct investment has positive impact on the growth of the Kenya economy through the service and agricultural sectors, however it is very insignificant. The positive impact of FDI on growth of agricultural sector in Kenya is good for the economic policy makers as several studies have shown FDI to have negative impact on the sector with fewer studies showing positive impact. Sectoral growths can help achieve significant growth in the two sectors in Kenya as they positively and significantly impact on both sectors. Direct investment can help achieve growth in the sectors if implemented well since its impact is positive but insignificant. Inflation levels as well as labour force growth both have negative impact on the sectoral growth. Exports promote growth of the agricultural sector while literacy levels negatively impacts on growth of services sector, both insignificantly.

5.3. Policy Recommendations

FDI's impact is positive to economic growth and from the study it shows it impacts positively but insignificantly to the growth of the sectors. The insignificant impact could emanate from the fact that Kenya's attraction to FDI has been quite low over the years thus the researcher proposes that the government of Kenya should continue to initiate incentives to attract more foreign investors to the country. It is also recommended that more investment should be put into the

manufacturing sector which positively encourages FDI-led growth to these sectors. Exports should be diversified in order to encourage more FDI-led growth in agricultural sector the researcher proposes investment by the government in the area of value addition within the agricultural production as well as investment into the exploration of minerals in Kenya. Minerals encourage growth by contributing largely to foreign currency within the country. The government needs to also increase its spending to create more employment opportunities for the huge literate population that is unemployed. The growth of any sector in Kenya encourages the growth of other sectors and therefore it is recommended that all sectors should be given opportunities for growth.

Finally, the researcher proposes that further research needs to be done to establish the impact Agricultural reforms have on FDI-induced growth in the agricultural sector and finally establish key policy areas on how FDI can be directed in order to encourage growth of the specific sectors. In addition, the researcher proposes a look at the impact political stability has on foreign direct investment attraction in Kenya.

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