

**IMPACT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC
GROWTH IN KENYA**

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DECLARATION

This research paper is my original work and has not been presented for a degree or any other award in any other university.

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DEDICATION

To my best friend and soul mate Wanjiku Wanderi, my lovely daughters; Wanjiku Muchiri and Muthoni Muchiri who stood many long hours of my absence in this quest for knowledge. You understood the need and encouraged me to keep on keeping on. May God Almighty reward your patience and encouragement.

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God bless us all in our endeavors.

ACRONYMS

ADF-	Augmented Dickey-Fuller test
ASEAN-	Association of South Eastern Asian Nations
EMU-	European Monetary Union
EPZ-	Exports Processing Zone
ERS-	Economic Recovery Strategy (for Wealth and Employment Creation)
EU-	European Union
FDI-	Foreign Direct Investment
GDP-	Gross Domestic Product
GFCF-	Gross Fixed Capital Formation
IDP -	Investment Development Path
KANU-	Kenya African National Union
KES/Ksh.-	Kenya Shillings
LDCs-	Less Developing Countries
MFR-	Mixed Fixed and Random coefficient approach
MTP-	Medium Term Plan (for the implementation of Kenya's Vision 2030)
NARC-	National Rainbow Coalition
NOI-	Net Outward Investment
ODA-	Official Development Assistance
OECD-	Organization for Economic Co-operation and Development
O-L-I-	Ownership, Location and Internalization advantages
OLS-	Ordinary Least Square

PLC -	Product Life Cycle Theory
SEZ-	Special Economic Zone
T/MNCs-	Trans/Multi National Corporations
UNCTAD-	United Nations Conference on Trade and Development
UNDP-	United Nations Development Programme
USA-	United States of America
WWII-	Second World War

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ACRONYMS	iv
TABLE OF CONTENTS	vi
LIST OF FIGURES AND TABLES.....	x
ABSTRACT.....	xi
CHAPTER ONE	1
1. INTRODUCTION	1
1.1. Background.....	1
1.2. Foreign Direct Investment in Kenya.....	3
1.3. Key legislative initiatives to attract foreign investments	5
1.3.1. Export Processing Zones Act.....	5
1.3.2. Investment Promotion Act	5
1.3.3. Special Economic Zones Act, 2015	6
1.4. FDI and Economic Growth-Kenya’s Trend.....	6
1.5. Statement of the Problem.....	7
1.6. Research Questions	7
1.7. Objectives of the study.....	8
1.7.1. Main objective	8
1.7.2. Specific objectives	8

1.8.	Significance of the study.....	8
CHAPTER TWO		10
2.	LITERATURE REVIEW	10
2.1.	Theoretical review	10
2.1.1.	Internalization theory	10
2.1.2.	Eclectic Paradigm or O-L-I theory.....	11
2.1.3.	Investment Development Path Model.....	12
2.1.4.	The Product Life Cycle (PLC) Theory.....	13
2.1.5.	Capital Theory	14
2.1.6.	Selected growth theories	14
2.2.	Empirical Review.....	15
2.2.1.	Motivation and types of FDI.....	15
2.2.2.	Causality between FDI and Economic Growth.....	17
2.2.3.	Impacts of FDI	18
2.2.4.	Conditions affecting FDI impacts on Economic Growth.....	19
2.2.5.	Summary of the literature review.....	23
CHAPTER THREE		24
3.	METHODOLOGY	24
3.1.	Research Methodology	24
3.2.	Model Estimation.....	24
3.3.	Theoretical Framework.....	24
3.4.	Analytical Framework.....	25

3.5.	Description of variables	26
3.6.	Data and its Sources	28
3.7.	Pre-estimation tests	29
3.7.1.	Testing for Stationarity	29
3.7.2.	Testing for Co-integration.....	29
CHAPTER FOUR.....		30
4.	EMPIRICAL RESULTS.....	30
4.1.	Descriptive Statistics.....	30
4.2.	Correlation Matrix	31
4.3.	Diagnostic Tests.....	32
4.3.1.	Test for Heteroscedasticity.....	32
4.3.2.	Serial correlation.....	32
4.3.3.	Multicollinearity	33
4.3.4.	Normality of the error term.....	34
4.4.	Stationary Test	35
4.5.	Interpretation of the Results	38
4.6.	Discussion of the Findings	39
CHAPTER FIVE		42
5.	CONCLUSION AND POLICY IMPLICATIONS.....	42
5.1.	Conclusion	42
5.2.	Policy Implications	43
5.3.	Limitations of the Study.....	43

5.4. Areas for Further Study.....	44
REFERENCES	45

LIST OF FIGURES AND TABLES

Figure 1: Kenya's FDI and economic growth trend.....	6
Table 1: Descriptive Statistics	30
Table 2: Correlation matrix.....	31
Table 3: Test for Heteroscedasticity	32
Table 4: Serial correlation.....	33
Table 5: Multicollinearity	34
Table 6: Test for Normality	35
Table 7: Test for Stationarity in Levels	35
Table 8: Test for Stationarity (First Difference)	36
Table 9: Test for Stationarity (Second Difference).....	37
Table 10: Test for Stationarity (Third Difference).....	37
Table 11: OLS Regression Results	38

ABSTRACT

Different scholars hold different opinions as to the exact contribution of Foreign Direct Investments in the economic growth discourse of many developing countries. Proponents believe FDI augments domestic capital and enhances productivity and growth through filling of the savings; foreign exchange; revenue; and management gaps in addition to promoting credit and risk sharing across borders; technology and skills transfer; employment creation. Opponents believe that FDI expose domestic markets to external volatility; increase dependency, and crowds out domestic savings thus undermines macro-economic stability.

The Government of Kenya places a high premium on the contribution of inwards FDI towards economic growth as evidenced in various deliberate interventions it has initiated to harness FDI inflows into the economy including legislation and incentive marketing. Yet, previous studies on the real contribution of FDI on economic growth or conditions under which FDI boosts economic growth have yielded mixed results. Given the level of importance accorded to inbound FDI to Kenya's economic growth, this study set to analyze the impact of FDI on economic growth in Kenya using time series from 1980 to 2015. Ordinary Least Square (OLS) method was used to estimate the impact of FDI and other variables on real GDP of Kenya.

The key finding is that 73.84 percent of the variation in Kenya's economic growth over the period is explained by level of infrastructure and human capacity development, FDI, Gross Fixed Capital Formation, Inflation, Financial Development, labour stock, openness of the economy and interactions between FDI and complementary conditions. By itself, however, FDI is not insignificant in influencing economic growth in Kenya but must interact with infrastructure development and openness of the economy to yield the desired impact on economic growth. Accordingly, for the economy to realize its medium term and long term aspirations, whose success the government has pegged on the inbound FDI, these conditions need to be availed or harnessed.

CHAPTER ONE

1. INTRODUCTION

1.1. Background

Developing countries, regardless of their geographical locations, exhibit some common characteristics including: low living standards; low levels of labour productivity; high population growth levels and dependence burden; high and rising unemployment levels and under-employment; dependence on agricultural production and predominantly primary products export; and vulnerability in international relations (Todaro 1977). This in essence means that these economies have slow growth rates, low per capita incomes, and high propensity to consume which consequently translate into low propensities to save. That is, they have higher consumption rates compared to the rate of national wealth creation which results to low capital accumulation, and thus domestic investments, as the economies face deficiencies in capital necessary to undertake development initiatives. Given the low domestic investments, private foreign investment flows are needed to expand productive and technological capacities of developing economies.

(UNCTAD 1999) defines Foreign Direct Investment (FDI) as an investment involving a long term relationship, a lasting interest and control of resident entity in one economy in an enterprise resident in an economy other than that of the foreign direct investor. (The World Bank 2010) defines FDI as cross-border equity flows between economies where a resident in one economy controls (at least 10% voting stock) the operations of a business entity domiciled in another economic jurisdiction. From the Investment Promotion Act (Republic of Kenya 2004), foreign investment can be said to mean contribution of foreign capital in the establishment, growth, reorganization of a business venture within the country. Foreign investor can take the form of a natural person not a Kenyan citizen; a partnership with majority control owned by non-Kenyan; or a company incorporated under other legal jurisdictions other than Kenya's.

Contribution of foreign capital by way of Foreign Direct Investments is mainly undertaken by Multi-National Corporations (MNCs) which carry with them production technologies, tastes, and

styles of living and managerial business practices. They take advantage of cross- border supply chains, differential levels of development, and exploit comparative advantages of the destination economies because unlike foreign aid, they are not charitable but profit driven.

(The World Bank 2010) contrasts FDI from portfolio investment by comparing the degree of influence each one accords the respective owners. While portfolio investments represent passive ownership of securities, FDI represents an active participation of owners in decision making and operations of the firm. According to (Mwega 2009), FDI includes: equity capital; reinvested earnings and; intra-company loans, with the first two dominating net FDI to Kenya.

Opinion is divided about the actual contribution of Foreign Direct Investments towards economic growth. Proponents believe in efficiency and benefit of free market mechanism of FDI and argue that FDI fills the savings gap, foreign exchange gap, revenue gap and management gap (Todaro 1977), promote credit and risk sharing across borders (O'Connell *et al*, 2010) and bring with them superior technology and skills base, promote skill upgrading, provide employment and enhanced innovation and thus can be said to enhance productivity and growth (Blomström 1986). According to (Abala 2014) FDI augments domestic capital, facilitate movement of technology and trade across borders, skills development to domestic labour, and upgrades technical and managerial capacities. (Mwega 2009) sees FDI as impacting positively on the profit and productivity prospects of private domestic investment through provision of investable financial resources, new technologies and efficiency.

Opponents on the other hand argue that FDI undermine macro-economic stability by exposing domestic markets to external volatility and sharpening the trade-offs between competing objectives of monetary policy, widens the said gaps, increase dependency, and crowds out domestic savings (O'Connell *et al*, 2010). Hence, according to (Schnitzer 2002), many economies in Africa until late 1980s, did not assign a great value to FDI as many leaders feared for “loss or dilution of political sovereignty”, adverse effects on domestic firms e.g. bankruptcy and general deterioration the environment resources especially if foreign investments were directed to the natural resource sector.

1.2. Foreign Direct Investment in Kenya

Independent Kenya has a long history with private foreign capital inflows. Soon after independence, Sessional Paper No. 10 on *African Socialism and its Application to Planning in Kenya* (Republic of Kenya 1965), albeit reluctantly, took cognizance of the role played by foreign investments in the development agenda for the country. It advocated for mutual responsibility which included availing shares to Africans, employing qualified Africans in management and providing training to them. The Sessional Paper further acknowledges shortage of domestic capital and sees capital from abroad as a panacea to the shortage, at least in the short term but recommends increased domestic savings with legally compelled investment at home to fully finance development needs of the country.

(Kumar, Ndungú and Garrido 2010) note that Kenya's investment was on a trend decline until about 1995 touching post independence lows in 1992 (10.4 percentage GDP) due to insufficient or stagnated public and private investment. However, successive National Development Plans for Kenya have placed a high premium on foreign investments as regards the country's development aspirations. The National Development Plan, 1997-2001 (Republic of Kenya 1996) emphasizes the need to expand and modernize the existing industries and attraction of new investments in light manufacturing and resource based industries to improve the living standards and create employment opportunities of Kenyans. The plan notes that not only was the nation's Gross Fixed Capital Formation (GFCF) on a decline i.e. 17 percentage GDP in the early 1990s compared to 31 percentage and 21 percentage in the 1970s and 1980s respectively partly attributed to her past inward oriented economic policies which led to the development of an inefficient and uncompetitive manufacturing sector majorly characterized by underdeveloped intermediate and capital goods industries (and thus heavy reliance on imported intermediate inputs and machinery), and insufficient domestic linkages. The plan therefore recommends deliberate efforts to enhance investments and savings to the region of 25-30 percentage GDP through sufficient mobilization of domestic savings and tapping of foreign savings through the promotion of direct foreign investments. To realize this aspiration, the investment climate needs to improve i.e. political stability, developed and maintained infrastructure, skilled labour, well established banking and financial network, efficient civil service and attractive investment

incentives. Around this plan period, Kenya rebuilt its foreign exchange reserves and improved her balance of payment position which improved overseas private investors' confidence that remittance of dividends and loan service would not be jeopardized and accelerated of the flow of imports to support investments (Collier 2010).

More recently, and with a significant change of political climate in the country, the Economic Recovery Strategy (ERS) for Wealth and Employment Creation (Republic of Kenya 2003) which was anchored on restoration of economic growth; infrastructure development; improvement of citizens' welfare; and accountable management of resources as the main pillars emphasized on the need for creating a conducive investment and business environment in Kenya. According to the Strategy, this would require a growth of GFCF/GDP ratio from 16.8 percent (2002) to approximately 23 percent (2007), and ratio of domestic savings to GDP from 10.7 percentage in 2002 to 15.8 percentage in 2007. Indeed, the Investment Plan for ERS (Republic of Kenya 2003) projected that investment growth would drive the growth aspirations of the country, with estimated external investment requirements amounting to at least US\$2.2 billion and US\$1.1 billion in the public and private sectors respectively over the period 2003-2007. Consequently, investment levels needed to rise from 13.6 percentage to 24.3 percentage GDP if the anticipated growth levels were to be achieved by 2007. (Collier 2010) reports that the Strategy recorded perceptible turn-arounds including investors' confidence and growth prospects from 2.9 percentage in 2003 to 7.0 percentage in 2007, public sector deficit was contained, supported by among others a strong balance of payments position occasioned by large inflows of remittances, high receipts from tourism and improved FDI.

Building on the successes of the ERS, Kenya formulated a long-term development blue print christened the Kenya's Vision 2030. This blue print, which is anchored on economic, social and political pillars, aspires for Kenya to be globally competitive and prosperous, attain middle-income status and offer its citizens high standards of living by year 2030. (Otieno, Ndungú and Owino 2010) recommend that investments and savings need to increase accordingly to more than 30 percentage GDP if the double digit growth envisioned in the economic pillar. The macro economic framework under the Second Medium Term Plan (MTP II -for the implementation of the Vision) aims at sustaining and increasing the growth momentum inherited from the first MTP

through increasing the level of domestic capital formation, tapping on economic contribution from Kenyans living and working abroad, and FDI in every economic sector (Republic of Kenya 2013). During the first Medium Term Plan (MTP I) period i.e. 2008-2012, Kenya's levels of domestic savings and investments was an average of 13 per cent of GDP, which is less than sub Saharan Africa average (17 per cent). This was partly attributed to a number of negative shocks, including, the post-election violence experienced in early 2008, drought and erratic weather patterns, financial and economic crisis experienced globally in 2008-2009 which led to a slowdown in global economic activity and persistent high international oil and food prices during the first MTP that covered the period 2008 to 2012.

1.3. Key legislative initiatives to attract foreign investments

Kenya has engaged in various deliberate policy and legislative initiatives all aimed at promoting Foreign Direct Investments.

1.3.1. Export Processing Zones Act

In 1990, Kenya passed the Export Processing Zone (EPZ) Act which established the Export Processing Zones Authority to; promote and facilitate investment in local production for the export markets and the development of supporting investment environment for such manufacturing, commercial or service activities and for "connected purposes". The Export Processing Zone enterprises amongst other raft of incentives are exempted from the payment of withholding tax on dividends and other remittances to foreigners (expatriates), income tax; and exchange controls on payments (Republic of Kenya 1991). While EPZs are open to both local and foreign investors, these exemptions seem appear to be direct incentives to foreign investors

1.3.2. Investment Promotion Act

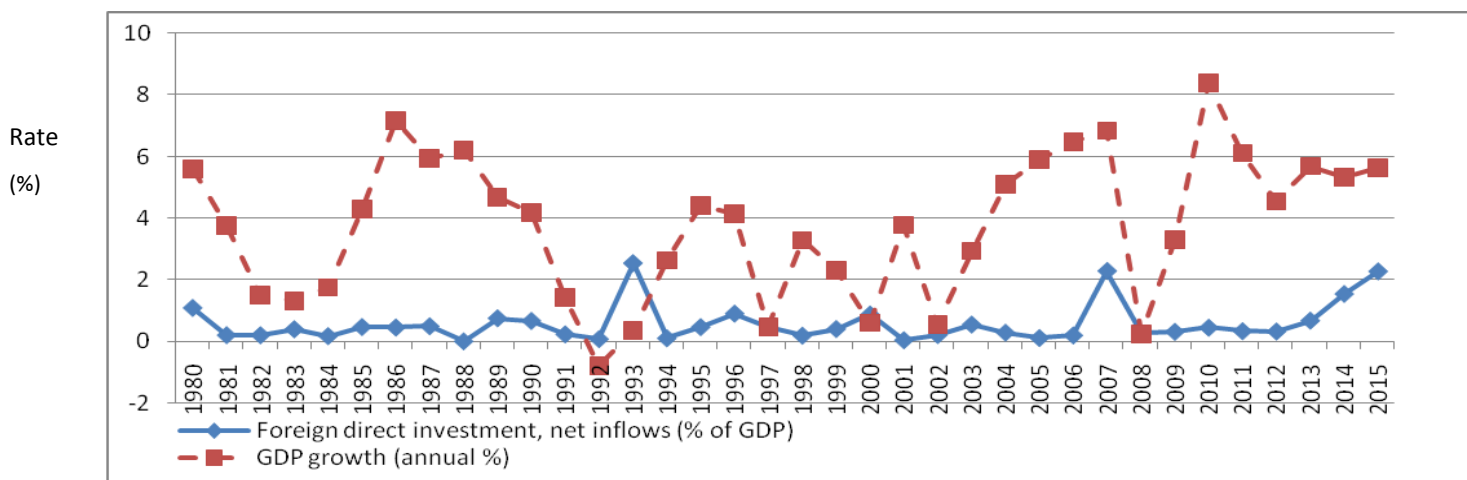
Broadly, the Act aimed at simplifying the investment process through establishment of KenInvest (a Government Semi-Autonomous Agency) whose main objective is to promote investments in Kenya through facilitation of establishment of new projects, provision of "After-Care" services to new and existing investments, and promoting Kenya as an investment destination locally and internationally.

1.3.3. Special Economic Zones Act, 2015

Implementation of this Act will lead to designation of Special Economic Zones (SEZs) which geographical areas with land use, infrastructure and utilities are integrated sector-wise. The Special Economic Zones Authority will facilitate the enactment of business enabling policies, promote foreign and domestic investments in the designated zones. This will be undertaken by public agencies, private investors or through public-private partnership. (Republic of Kenya 2015)

1.4. FDI and Economic Growth-Kenya's Trend

Figure 1: Kenya's FDI and economic growth trend



Source: The World Bank

A look into the trend of Kenya's economic growth indicates a stance that is susceptible to both internal and external shocks. For example, the negative growth in 1992 is attributed to the massive divestments and withdrawal of official development assistance due to uncertain political climate occasioned by agitation for multi-party democracy, the ensuing violence, and run-away corruption evidenced in the lead-up to that year's general election. Generally, all election years have some indication of adverse effects to the economic growth rates i.e. 1992, 1997, 2002, 2007, and 2012. The decade 1991-2000 is indicative of uncertainties in Kenya's economic growth trajectory. However, from 2002, the economy experienced an upward growth trajectory partly attributed to smooth transition from KANU to NARC Governments and the deliberate macro-economic stabilization efforts that the succeeding government initiated. Indeed, this

period coincides with the ERS period (2003-2007). This shows that Economic growth has strong correlation to the political (and by extension investment) climate and macro-economic stability. Of importance, the sharp decline in the growth rate in 2008 is a direct consequence of the post-election upheavals experienced late 2007 and early 2008. Going forward, the economy has somewhat shown signs of recovery, albeit below the envisioned growth rates of at least 10 percentage in the Vision 2030.

1.5. Statement of the Problem

The Government of Kenya places a high premium on the contribution of inwards FDI towards economic growth as evidenced in various deliberate interventions it has initiated to harness FDI inflows into the economy. However, Kenya's receipts of inbound FDI as a fraction of GDP remains lower than Sub-Saharan Africa i.e. a six year (2010-2015) average of 0.9% compared to 2.4% for Sub-Sahara Africa (SSA) (The World Bank 2016)

Despite the general perception of the positive contribution inbound FDI towards economic growth, information on the actual impact to the economic growth of Kenya has been insufficient. Yet, successive governments have laid emphasis on the need to improve investment climate (in some instances offering concessions) in bids to spur economic growth. The question in the minds of policy makers is what is the real contribution of FDI on economic growth? Are there specific conditions under which FDI boosts economic growth? Previous studies in these areas have yielded mixed results.

Given the level of importance accorded to in-bound FDI to Kenya's economic growth, it is necessary to empirically assess the FDI-economic growth nexus.

1.6. Research Questions

This study will undertake a time series analysis of FDI and economic growth in Kenya from 1980 to 2015. In doing so, the following questions will be answered:

- i. Does FDI really complement growth?
- ii. What factors determine the effects of FDI on Kenya's economic growth?

1.7. Objectives of the study

1.7.1. Main objective

The main objective of the study is to find out whether FDI inflows have an impact on economic growth in Kenya.

1.7.2. Specific objectives

The study seeks to:

- i. Empirically analyze the impact of net aggregate FDI inflows on economic growth in Kenya over the period 1980-2015 and
- ii. Determine the complementary factors under which FDI boosts growth as hypothesized in literature
- iii. Make policy recommendations based on (i) and (ii) above.

1.8. Significance of the study

The Government of Kenya has instituted deliberate interventions to attract direct investments from abroad. This study contributes to the FDI-Economic growth discourse by extending the debate beyond the direct attribution of FDI to economic growth through analysis of factors that affect FDI-induced growth. The study will help us realize the real worth of such interventions and inform decisions about on how the economy will harness the FDI-induced economic growth. Additionally, since the study covers a relatively long period (1980-2015) during which the economy experienced internal shocks (including a peaceful transition from KANU to NARC administration in 2002, and the 2007-2008 Post-Election Violence), findings will help us analyze the impacts of these shocks as they have a direct bearing on the investment climate in general and economic stance adopted by the nation.

The outcome of this enquiry will inform policy decisions with respect to Kenya's investment stance. If the complementary factors positively affect the impact of FDI in economic growth, policy makers may device ways to encourage, avail or facilitate the provision of these factors to attract more FDI inflows into the economy. If it emerges that FDI and economic growth are positively related, then policies aimed at increasing FDI inflows into Kenya will be encouraged.

Conversely, if FDI has negative impact on economic growth, then policy makers would reconsider initiatives already in place to attract FDI. It will thus open up new areas of enquiry partly informed by the changing dynamics of World Investment, and the ever progressive Kenyan Economic Agenda. As such, new enquiries will address the Kenya-specific FDI-economic growth nexus.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Theoretical review

The level of attention and deliberate interventions different nations of the world economies are instituting to harness inbound FDI point to a general conclusion that indeed, FDI impacts to both on the host and recipient economies. What has not been conclusively agreed, however, is the complex nature FDI relationship with economic development. To better understand the economic mechanism, behavior of economic agents (motivations to venture overseas), and the end effect of FDI on the host and source economies, a background review of theories that have attempted to explain the FDI phenomenon is necessary.

Giving a short chronology of theories that have attempted to explain FDI, (Nayak 2014) observes that proper explanation of FDI began in the 1960s and that scholars attempted to integrate activities of Multi-National Corporations (MNCs) into the theories with their increasing role in investment activities abroad. Some theories allude to the fact FDI arise from market imperfections, monopolistic and oligopolistic advantages while others link this movement to international trade.

2.1.1. Internalization theory

Internalization theory of Foreign Direct Investments developed by (Buckley 1976) explains the genesis of FDI by focusing on market imperfections in the intermediate inputs and technology markets and especially the knowledge flows to production. These imperfections result from: long time-lags required to co-ordinate resources; discriminatory pricing; unstable bargaining positions; transfer pricing motivated by government interventions; and unpredictable pricing for goods on sale. Faced with these imperfections, firms opt to protect their proprietary knowledge through secrecy rather than intellectual property rights (trademarks and patents) and by doing so; they concentrate (internalize) new technologies development within themselves before transferring such knowledge to other firms. Transfer of knowledge only occurs when the firms are satisfied that the benefits outweigh the costs of doing business abroad. Should these costs be more, the firm opts to outsource production to an independent firm or produce at home and export.

2.1.2. Eclectic Paradigm or O-L-I theory

(Dunning 1977), in Eclectic Paradigm or O-L-I theory stated that Trans-National Corporations (TNCs) invest overseas to exploit three forms of advantages. First, Ownership advantages which are (in) tangible assets exclusively possessed by or are specific to a firm and are enjoyed over domestic or foreign competitors accord the firm competitive edge locally and (or) abroad through reduction of its production costs. They arise from imperfect markets and include: proprietary competencies (technology, know-how and innovation capacities); Research and Development (product differentiation); monopoly advantages (ownership of limited natural resources, patents and trademarks) and advantages of large size (economies of scale, large scope and extensive financial base). They raise barriers to entry which in turn prevent the possessing firm from deriving full rent from these resources at an arm's length market transaction. This in turn raises internalization advantages which lead to the investors' choice to enter foreign markets through investments abroad (Kyrkilis and Moudatsu 2011).

Location advantages complement Ownership advantages and determine which countries become hosts to TNCs and include: economic benefits (Factors of production, cost of doing business, market size, agglomeration economies, and the general economic climate); political advantages (favourable policies and political stability); and social advantages (demography). Internalization advantages as discussed elsewhere in this document arise from a firm exploiting its core competencies and they influence firms' decisions such as partnership arrangements. According to (Kyrkilis and Moudatsu 2011), they determine the mode of entry into overseas markets e.g. licensing, franchising or establishing a subsidiary abroad (FDI).

Generally, the value add generated by these three advantages to the firm outweigh the overall value add which would have been generated if the firm chose to engage in export trade. (Dunning 1981) noted that if a firm only possesses ownership advantages, Licensing is the most preferred form of entry, while export trade is the preferred mode if the firm possess both ownership and internalization advantages. FDI is preferred if the firm has ownership, internalization and location advantages.

2.1.3. Investment Development Path Model

In line with the Eclectic Paradigm, Dunning, 1981 modeled the Investment Development Path (IDP) along Rostow's growth stages where economies in various growth stages portray different configurations of O-L-I advantages as they undergo a unique mix of conditions politically, culturally and economically. According to (Fonseca Miguel 2007), FDI develops through a path informed by interactions between the level of economic development and the country's net outward investment (NOI) position. (Kyrkilis and Moudatsu 2011) observe that IDP is idiosyncratic in nature, that is, the path is country specific and is influenced by: the level and nature of natural resource endowment; size of the market; nature of the economic system (Export orientation or Import Substituting) and macroeconomic policy environment (Government policies, market mechanisms).

Economies in stage one of economic development experience negative Net Outwards Investments (NOI) positions because they lack sufficient Location and Ownership advantages and are typically characterized by insufficient levels of capital accumulation, capita incomes, markets, infrastructure, and poorly skilled labour force which limit the country's attractiveness as a destination for FDI and the capacity of local firms to engage in international production. At this stage of pre-industrialization, countries endowed with natural resources may attract natural-resource-seeking FDI.

Inwards FDI begins to flow in the second stage as a country exploits location advantages arising from industrialization, infrastructure development, capital accumulation, increased domestic demand, productivity and human capacity. NOI remains negative as local firms cannot exploit ownership advantages to trigger outward FDI, although exports in labour intensive and low technology goods may occur.

Economies in the third stage (mostly emerging economies) exhibit a growing NOI position as outward FDI grows and inward FDI gradually slows down. Improved income levels lead to increased demand for higher quality products; higher wage levels erode the low labour cost advantage dissuade investments locally leading to overseas venture where labour costs are lower; while technology advancement encourages capital intensive production of standardized goods.

Inbound FDI becomes increasingly efficiency seeking and low wages are no longer the main motivation. Regional economic integration enables location of different production phases in constituent states based on their comparative location advantages and hence the inflow of FDI to states with such advantages.

NOI position of economies is positive in fourth stage as local firms develop ownership advantages similar to those enjoyed by foreign firms although they still lack information intensive technology. Governments, by way of policy, strive to lower transaction costs, regulate markets, and shift their focus from location advantages to technology and skill accumulation. Outward FDI balances inward FDI (both efficiency and strategic assets seeking FDI) in the fifth stage due to cross border production and exchange as countries increasingly engage in knowledge generation, information intensive technology and efficiently organized markets and FDI patterns become increasingly integrated, interrelated and commonly motivated as countries converge.

2.1.4. The Product Life Cycle (PLC) Theory

The PLC theory by (Vernon 1966) postulates that as a product moves in its lifecycle (introduction, growth, maturity, and decline), comparative advantages in production change from the innovating (developed) to developing economies as domestic market becomes more competitive. Firms invest overseas to have access to cheaper factors of production, open up to new markets, and enjoy government initiated incentives like tax concessions, preferential treatment and export orientation. According to (Latorre 2008), as products mature, competition in the local markets increases. During introduction stage of the innovation, the product is produced and sold in high income and skill countries after which exploration of new markets lead to exports. Growth stage is characterized by low price elasticity, increasing international demand for the product, and rising local competition which lead to establishment of production units overseas. At the third (maturity) stage, the product is standardized as the technology becomes well known and the product reaches the plateau stage of its lifecycle beyond which, investments only move to low-cost countries. Thereafter, the initial country of origin explores other innovations and imports the initial innovation (product).

2.1.5. Capital Theory

(Mundell 1957) in what was christened the capital theory empirically observed that (American) firms opted to invest abroad if they could get higher rates of return. The theory is thus premised on differences in the rate of return between countries. This theory, however, faced some deficiencies in the fact that there could be observed flows of FDI in both directions between two countries (Hymer 1976).

2.1.6. Selected growth theories

According to (Todaro and Smith 2010) post war (WWII) economic development theorization centers around four schools of thought viz: Linear growth model; structural change models; international dependence models; and free market counter revolution. Linear models see economic development as series of growth stages experienced by all economies. The series is informed by different endowments of savings and investment. (Rostow 1960) propounded that economies go through sequential but distinct stages of development and that all societies lie within one of the five stages. Economies at the traditional (pre-Newtonian) stage experience limited productive potential levels due to lack of or insufficient application of science and technology while those in the second stage (pre-conditions for take off) embrace modern science, thereby addressing the diminishing returns problem and expanding the choice benefits from their interaction with more advanced economies. Take off stage sees a rapid expansion of industries, profitability, profit re-investment, increased income levels and adoption of technology. Drive to maturity stage where economies participate in international markets and local capacities (production, technological or business) increases ushers the maturity stage where focus now shifts to durable goods.

Structure change theorists like (Lewis 1955) prescribe a re-organization of internal processes (economics, industrial and institutional structures) for developing countries to transit to developed status and sustain economic growth. In his Two-Sector Model, Lewis saw the mobility of labour from the labour surplus agricultural sector to the highly productive modern sector as influenced by investment and capital accumulation in this sector. The sector is not only more profitable (and thus re-investment is possible) but also has higher wage rates which lead to savings and more investments thus economic growth.

2.2. Empirical Review

Developing countries generally and Kenya in particular seem to appreciate the positive role FDI in the economic growth discourse. They engage in deliberate efforts to attract, harness and sustain inward flow of foreign capital. Accordingly, (UNCTAD 2005) reported that global FDI inflows increased from approximately US\$55 billion in 1980 to around US\$ 1,400 billion in 2000. This enquiry is therefore motivated by the observed increased level of importance placed on the role of FDI, the increased volumes of in-bound FDI and the various efforts that Kenya has put in place to attract FDI be it in macro-economic stabilization, legislation and other efforts to improve the business climate.

As noted by (Kyrkilis and Moudatsu 2011), FDI impacts positively on economic growth although Granger-causality between the two variables has not been explored comprehensively. (Albert Wijeweera 2010) agrees about the positive FDI-economic growth proposition but cautions that existing evidence on this nexus does not eliminate uncertainty. According to (Sumner 2005), the mixed findings arise possibly from differences in analytical methods and conceptual factors, including: differences in policy environments; FDI characteristics and host-country factors; data comparability challenges and different methodologies applied in various studies. The need to empirically understand the economic growth-FDI inflows nexus in host countries is therefore inevitable.

2.2.1. Motivation and types of FDI

Different motives of foreign investments impacts directly on the spillovers and income effects of FDI (Dunning 1992). (Resmini 2000) differentiated FDI as either market; natural resource; or efficiency seeking and observed that most foreign investors have a market-seeking motive. According to (Dunning 1992), abundant raw materials and labour are the greatest attraction of natural resource seeking FDI; while proximity to markets, customer relations, follow customers, network building, product adaptation attract market seekers. Efficiency seekers, are motivated by abundance of skilled labour at competitive wage rates, economies of scale (Kyrkilis and Moudatsu 2011), synergies of re-organization, that is, vertical and horizontal integration and changes in product mandates.

Strategic asset seeking FDI entails acquisition of firm specific assets associated with R&D, networks and branding. (Sumner 2005) cautions that resource (raw material) seeking FDI have low linkages with other sectors, result to low technological and knowledge transfers and therefore lead to few employment opportunities and few local spillovers. Market-access FDI creates employment in the local markets and sourcing directly from the local markets while efficiency (export-platform) seeking FDI lead to benefits associated to export trade (Varblane 1999) but may lack forward and backward linkages in the local economies according to (Chang 2003).

How FDI is attracted to the host economies seem to have ramifications to the effectiveness in the economy. According to (Tobin and Kosack 2006), serious economic distortions may result from a host country's attempts to attract FDI by granting foreign firms disproportionate advantages as this makes domestic firms uncompetitive leading to loss of indigenous enterprise while tax incentives deny governments tax revenues, heavily subsidized FDI crowds-out domestic investment or end up attracting inappropriate(inefficient) forms of FDI. (Jensen 2006), cautions against use of concessional incentives to attract inwards FDI as this usually nets-off the positive direct effects of FDI. (Carstensen 2004) criticized incentive marketing because in most cases, the host countries are typically much poorer than the mother countries to MNCs which were accused in the 1970s of repatriation of profit and uncompetitive behaviours by scholars such as (DosSantos 1970).

According to (Sumner 2005), most FDI enters as equity while the remainder fluctuates between intra-company loans, reinvested profits and cross-border mergers and acquisitions. (UNCTAD 1991) sees the main source of FDI flows as TNCs domiciled in the EU, USA, and Japan. (The World Bank 2003) estimated that at least 60 percent of global FDI outflows in 2001 came from the 'FDI Triad' but noted that South-South FDI was on the rising trend from 16 per cent (1995) to around a 30 per cent (1999).

2.2.2. Causality between FDI and Economic Growth

Different studies have yielded different results about the nature and magnitude of causality between these two variables i.e. uni-directional, bi-directional, heterogenous and no causality. (Kyrkilis and Moudatsu 2011), sees the relationship as path dependent and country-specific subject to idiosyncratic conditions of individual countries. (Choe 2003) found a two-way relationship between the two variables and a weak directional causality from FDI to growth. Similar results were arrived at by: (Hansen and Rand 2004) from a sample of 31 developing countries; (Al-iriani M. 2007) from a study of 6 Gulf Cooperation countries.

From his tests based on error correction model on 11 countries using time series data, (Zhang 2001) sees a strong relationship between the two variables while (Chowdhury 2006) did not find any evidence to support such causation in Chile, but found a two-way causation in Malaysia and Thailand. (De Mello 1999), applied time series on data from 32 countries (17 non-OECD) and found the relationship to differ across countries. Using panel data estimations, however, no relationship existed in the non-OECD countries. Other studies that arrived at similar results (heterogeneous relationship) include: (Nair-Reichert and Weinhold 2001) from their Mixed Fixed and Random (MFR) study of 24 countries between 1971 and 1995. From a panel study of 80 countries, while (Kyrkilis and Moudatsu 2011) cautioned that any causality between these two variables to vary by individual countries considered rather than a generalized condition.

Other scholars like (Liargovas and Angelopoulou 2014) found no causality between the two variables from panel study of 20 EU, EMU member-nations, and countries in transition between 1989 and 2008. Similar results were obtained by (Jensen 2006); (Carkovic and Levine 2002), from a study of seventy-two countries between 1960 and 1995; (Shabbir and Naveed 2006) from a panel study of 23 developing countries between 1970-2001; (Lyroudi K. 2004) from his Bayesian analysis on panel data of a sample of transition economies from 1995 to 1998; and (Tobin and Kosack 2006) whose study conclude that FDI negatively affects growth of skills in developing economies.

2.2.3. Impacts of FDI

While neo-classical growth models postulate that impact of FDI on growth is only short-term, (Brems 1970); (J Lee 1998) suggest that the increased capital stock as augmented by inwards FDI corrects the short-term diminishing returns to capital through labour training, skill acquisition and technological spill-overs and thus host economies are sustained along a long-term growth path. According to (Bornschiefer 1980), FDI-induced growth reduces in the long run as foreign firms contract their economic participation abroad in the long run. Endogenous growth models correct this by viewing FDI as a vehicle for technology and knowledge transfer whose positive externalities and productive spillovers have long-run effect on growth (Barro 1995)

(DeMello 1997) see FDI as key in addressing insufficiency of capital and productivity in many developing economies as it results to allocative efficiencies, knowledge and technology transfers, diversification of risks. (Polpat Kotrajaras 2011) notes that FDI as a mode of financing remains prominent over other types of capital flows in East Asian countries. Following the 1988 debt crisis, (Sumner 2005) notes that the capital positions for developing economies (which generally face insufficiency of resources to fund development) worsened as commercial bank lending dried up and aid fell. Therefore, FDI was increasingly viewed as a panacea to these capital problems and economies took deliberate efforts to attract it (Tobin and Kosack 2006)

FDI contributes economic growth directly through financing of development initiatives, and indirectly through knowledge and technology transfers (Liargovas and Angelopoulou 2014). According to (DeMello 1997) inwards FDI enhance the adoption of new products and production techniques in the host economy (technological spill-overs), stimulate knowledge transfers, (human resource training) and introduce superior managerial capacities. According to (Kyrkilis and Moudatsu 2011), higher quality requirements for the intermediate inputs purchased from the local manufacturers, economies of scale, improved competitiveness of domestic downstream industries and the entry of new producers are the main mechanisms through which technology is transferred amongst economies.

According to (Wijeweera 2010), FDI lead technology capacity development and narrows the savings deficits (difference between savings mobilized locally and the required savings for a

given level of investment). In addition, interaction between domestic and foreign firms results to productivity spillovers (Blomstrom 1983) and (Kokko 1994) because they enjoy higher value-addition than domestic firms (Willmore 1986). With the entry and operation of multinational firms' local affiliates, competition increases and this pushes local firms to improve efficiency while technology and know-how are shared through business transactions, imitation and hiring workers trained by MNCs (Shabbir and Naveed 2006) and (Tobin and Kosack 2006).

Moreover, MNCs indirectly open up host economies to the global economy through export trade and improvement of infrastructure and business environment (Mwega 2009). This, in turn, may result to economic integration which according to (Liargovas and Angelopoulou 2014), lead to not only enhanced coordination of the member country's trade policies and parts of their economic and fiscal policies but also generates opportunities for internal efficiency and economic stability which further stimulates FDI. At firm level, FDI leads to improved labour productivity and total factor productivity as MNCs introduce firm-specific assets and knowledge (Dunning 1992). The magnitude of benefit depends on conditions in the local markets (Blomstrom 2003); (UNCTAD 2000). Their impact may be maximized if FDI intake is gradual (Desmet 2004) and if they are extended beyond the short term horizon (Konings 2001).

2.2.4. Conditions affecting FDI impacts on Economic Growth

According to (Albert Wijeweera 2010) and (Ellingstad 1997), the host economy must meet a threshold of initial economic conditions as they influence the macroeconomic outcomes of capital inflows. Impacts of FDI are only evident in economies which have attained significant development levels for: education, infrastructure, financial development, and trade openness (Polpat Kotrajaras 2011). (Prasad E 2006) agrees that host economies will reap better growth and stability benefits from FDI if their financial markets and other governance institutions are developed, and have appropriate macro-policies. From his study of sixty-nine developing countries between 1970 and 1989, (J Lee 1998) concluded that the level of human capital development positively affects the impact of inward FDI economic growth. According to (Tobin and Kosack 2006), human development positively influences the organizational capacity to adopt new technologies, production functions, and economic outputs. A sufficient and highly educated labour force (DeMello 1997); good infrastructure facilities (Balasubramanyam 1996);

sufficiently developed financial markets/systems (Hermes 2003), (Alfaro L. 2004); and high per capita incomes of the host economy (Blomström 1994) contribute to the positive growth effect of FDI spillovers.

Host countries which are open to international trade reap better from FDI. (Balasubramanyam 1996) studied 46 economies and concluded that FDI impacts positively on growth in countries which embrace export-orientation as trade enhances transfer of benefits of industrialization and technology. (Levin and Raut 1997) corroborate this view in their study of 30 semi-industrialized developing countries from which they found out that high degree of trade and education expenditure were necessary conditions if FDI was to influence growth of recipient countries. According to (Adeolu 2007), FDI-induced growth is evident in economies open to trade and have a developed labour force. In fact, (Shabbir and Naveed 2006) attributes diffusion of technology to product imports, adoption of technology, superior organization practices and human capital development or what (Findlay 1978) called the "contagion" effect of FDI. Indeed, (Sahoo Dukhabandhu 2006) attribute China's economic reforms that opened it to the world economy in 1979 to the reported increase in inwards FDI from less than 5 billion US dollars in the 1990's to 37 billion US dollars in 1997.

Closely related to the trade openness, the level of a host country's integration with other economies into regional blocks has an impact to the degree of FDI flows into the country. (Liargovas and Angelopoulou 2014) concluded that the degree of economic integration of the receiving economy with other economies affect the determinants of foreign investments. In particular, they observed that in the most integrated countries (European Monetary Union-member countries in their case) FDI inflows are triggered by increase in research activities and expenditure in development of new products and technologies of production. According to their study, increases in tariffs trigger FDI inflows in the less integrated countries (European Union member countries). In Countries that have low or no levels of integration, in this case those that are transiting at various levels of economic development, FDI inflows are attracted mainly through increases in levels of local capital accumulation, product innovation and development as well as by a fall in the levels of inflation. According to (Kyrkilis and Moudatsu 2011) , integration leads to convergence of economies towards the same growth path, economic

structures and policies and most importantly, increases market size. This attracts efficiency seeking foreign investors who are keen on tapping integration benefits including coordinated production and supply chain functions.

The level of host country's development has a bearing on the FDI effects on growth. (Blonigen 2005); and (Strout 1996) concluded that growth impacts of FDI are more pronounced in developing countries which have a sufficient skill base. This, however, was not the case for developed countries. This view is corroborated by (Johnson 2006) who asserts that FDI corrects low productivity and capital stock deficiencies in developing economies. According to (Blomström 2001), most developing economies depend strongly on foreign capital with little or no host government's effort to augment FDI's contribution towards economic prosperity. This view is contradicted by (Sumner 2005), who feels that the growth benefit from inwards FDI is more explicit in developed economies as their supply chains and human resource capacities are more developed.

Understanding the peculiar characteristics of economies at various stages of development is necessary in instituting policy recommendations that have an impact on the effectiveness of FDI during transition (Jensen 2006). In the early stages of development, that Jensen christened the liberalization and stabilization stages, hyperinflation and negative economic growth, uncertainty in property rights and the rule of law, (Meyer 1995) and typically under developed legal, foreign exchange and trade environments (Bevan 2004) hamper inwards FDI. The second stage entails the State offloading its control in State Corporations through privatization and this enables direct participation of foreign capital in the host economy thereby offering a local market-entry opportunity (Jensen 2006). In the third stage, transition countries employ a raft of incentives like: preferential tax treatment, negotiated incentives, establishment of Special Economic Zones or industrial parks to attract FDI in green-field investment in what Jensen 2005 termed as location marketing.

According to (Bissinger 2012), impacts of FDI are influenced by the source and the receiving sector of foreign investments, the linkages they create with other sectors of the economy, their job creation capacity, and the host country's economic policies. Specifically, FDI in the

extractive and power sectors may not yield many spillovers as they are not as competitive and mobile as other sectors and are prone to “resource curse”, where discovery of resources provide new incentives for corrupt and rent-seeking behaviour and “Dutch disease”, where the currency appreciates and impacts negatively on competitiveness of other internationally tradable sectors such as manufacturing. (Walsh and Jiangyan 2010) noted that the FDI into the primary sector forms “enclave investments”, which have “little connection to the broader macro economy”. (Sayek 2005), used cross section OLS among 37 countries between 1990 and 2002, and found that positive impacts arose only in manufacturing sector, but not for service sector. (Alfaro 2003) found that only FDI in manufacturing sector was beneficial in the growth context while investments in primary sector had a negative effect on growth and investment in services had ambiguous results.

(Tobin and Kosack 2006) relate the success (or otherwise) of inward FDI to type of investments received and the host country’s capacity to extract the investment’s benefits both of which are influenced by the level of labour force skill capacity, technology absorption and wage levels prevailing in the host country. In fact, as noted by (Weisskopf 1972), in the earlier stages of development, FDI inflows to developing countries are mainly directed to the extractive sector, whose products typically fetch less market prices and value addition. To this end, (Sumner 2005), cautions that that such investments (in the primary sector) would worsen inequality status of these economies. (Kyrkilis and Moudatsu 2011) concluded that, the impact of inwards FDI will be limited in economies with low levels of technology.

The host country’s institutional, policy and governance climate determine the receiving country’s attractiveness towards foreign capital, and sustainability of application of such capital and the spillovers that come with FDI. As such, (Sumner 2005) see the host nation’s FDI policy regime-for example, reinvestment-profit repatriation requirements, and export threshold requirements, reservation requirements (about local employment and locally sourced supplies) as impacting directly to the growth enhancing spillover effects of FDI. Observing that FDI appears to impact more prominently in tight FDI policy regimes, he recommends that express local-foreign collaboration requirements and capital controls may be necessary if growth benefits were to be realized from foreign investments. According to (Bissinger 2012), poor investment climate,

exemplified by: corrupt practices; arbitrary policy-making; unjust commodity, financial and property markets controls; and a weak legal system limit the spill-over effects of foreign investments. From a study of 45 countries over the period 1997 to 2004 and using Stochastic Frontier Model, (Albert Wijeweera 2010) found that corruption impacts negatively on economic growth.

(Chang 1994) emphasized on the importance of government's regulatory role as this determines the acceptance conditions of in-bound FDI. In fact, (Sumner 2005), attributed the increase foreign investment activities from 1980s through to the turn of the twenty-first century to adoption of more FDI accommodating policies, including opening up the domestic markets and deliberate fiscal concessions and subventions. (Hanson 2001) observed that between 1998 and 2001, a total of 103 economies preferentially treated foreign investors by offering them fiscal incentives and exemptions. According to (UNCTAD 2003), amongst the 70 countries which liberalized their policies towards FDI in 2002, a majority (236 out of 248) of changes in investment regulations were beneficial to FDI, resulting largely to an increase in signed international investment agreements. (Sumner 2005) cautions against offering excessive fiscal incentives and preferential treatment of FDI as this weakens government accounts.

2.2.5. Summary of the literature review

The main observation from this review is that there seems to exist a relationship between FDI and growth. This relationship, however, appear to vary from country to country and therefore, countries need to be cautious with the strategies they employ to attract inwards FDI. As pointed out by (Jensen 2006), FDI forms a part of everything that influences economic growth and as such, we may not simplify and single out the growth effects of FDI from the National Accounts. In principle, therefore, studies about FDI-induced growth should extend their scope to beyond direct attribution of FDI to capture the aggregate growth effects of other factors such as prevailing macro-economic conditions, governance, legal, policy regimes and other interventions sought to spur economic growth.

CHAPTER THREE

3. METHODOLOGY

3.1. Research Methodology

In this chapter, the foundation for empirical analysis for this study is laid through theorization of the framework for FDI-induced growth, specification of the empirical model and description of data and variables. The chapter further lays foundation for discussion of findings in the subsequent chapter.

3.2. Model Estimation

This enquiry used Ordinary Least Squares to estimate the magnitude of impact and conditions for FDI-Induced growth.

3.3. Theoretical Framework

From the growth accounting model propounded by (Solow 1956), economic growth is not only explained by changes in stocks of capital and labour force growth rates but also by technological progress (or the lack of it). In this model, the technological progress (Total Factor Productivity) is considered as an exogenous factor which is not directly observable and basically captures productivity changes arising from other applications of factors of production. Applicability of this model is limited by the principle of diminishing returns to capital.

To correct the aforementioned shortcoming of the model, endogenous growth model theorists believed that economic growth results from endogenous, and not, exogenous forces. Focusing on positive externalities and spillover effects, several scholars explained the dynamics of economic growth. According to (Romer 1990), human capital is necessary in the production of output as it augments the other factors of production.

We adopted the endogenous growth model applied by (Zhang 2003), to postulate that FDI affects the output growth through the endogenous total factor productivity (A). We began with Solow's two-factor production function, which states that there exist a linear relationship between output and factors of production [Capital (K) and Labour (L)];

$$Y=g(K,L) \quad (1)$$

And then endogenize the total factor productivity variable A as a function of FDI as follows:

$$Y=AK^{b1}L^{b2} \quad (2)$$

Assuming that the total factor productivity A is influenced by inwards FDI, then

$$A=f(FDI)$$

$$A=BFDI^{b3} \quad (3)$$

Plugging equation (3) to equation (2), we obtain a production function that takes the following general form:

$$Y= BFDI^{b3}K^{b1}L^{b2} \quad (4)$$

3.4. Analytical Framework

According to the studies reviewed, initial threshold conditions of the economy affect the growth benefits of FDI. Accordingly, the endogenized total factor productivity A is expanded to include effects of these initial conditions which include: level human capital development (HK); infrastructure development (IF); financial market development (FD); macroeconomic discipline [inflation rate (INF)]; and trade openness (TRADE).

$$A= BFDI^{b3}HK^{b4}IF^{b5}FD^{b6}TRADE^{b7} INF^{b8} \quad (5)$$

After substituting the technology function [equation (5)] into the production function [equation (4)] and assuming that the resulting equation is linear in log form, we take logarithms to obtain the function:

$$Y= B.FDI^{b3}HK^{b4}IF^{b5}FD^{b6}TRADE^{b7}INF^{b8} K^{b1}L^{b2}$$

$$\ln(Y)=b0+b1\ln(K)+b2\ln(L)+b3\ln(FDI)+b4\ln(HK)+b5\ln(IF)+b6\ln(FD)+b7\ln(TRADE)+b8\ln(INF)+\mu \quad (6)$$

Equation (6) will help us estimate whether FDI is one of the variables affecting economic growth (our first objective).

To establish the factors under which FDI boosts economic growth (our second objective), we estimate the interaction between FDI and each of the conditional variables through multiplication of FDI with the conditions i.e. human capital development, trade openness, financial market development, inflation and infrastructure development. The orientation of the relationship will be determined by empirical analysis.

$$\ln(Y)=b_0+b_1\ln(K)+b_2\ln(L)+b_3\ln(FDI)+b_4\ln(HK)+b_5\ln(IF)+b_6(FD)+b_7\ln(TRADE)+b_8\ln(\text{inf})+b_9\ln(FDI)*\ln(HK)+b_{10}\ln(FDI)*\ln(IF)+b_{11}\ln(FDI)*\ln(FD)+b_{12}\ln(FDI)*\ln(TRADE)+b_{12}\ln(FDI)*\ln(\text{INF})+\mu \quad (7)$$

To obtain the growth function of these variables, we differentiate the equation with respect to time:

$$y=\beta_0+\beta_1k+\beta_2l+\beta_3fdi+\beta_4hk+\beta_5if+\beta_6fd+\beta_7trade+\beta_8inf+\beta_9(fdi)(hk)+\beta_{10}(fdi)(if)+\beta_{11}(fdi)(fd)+\beta_{12}(fdi)(trade)+\beta_{13}(fdi)(inf)+\epsilon \quad (8)$$

Where the lower case letters represent growth rates of the respective variables and ϵ is the error term.

3.5. Description of variables

The following variables will be used in our analysis: the ratio of Gross Fixed Capital Formation expressed to GDP (*GFCF/GDP*) will proxy the level of domestic capital formation(investment), labour participation rate as a proxy for labour stock (*l*); Government investment in education will proxy the extent of human capital development (*hk*), Development Vote in the Public (Government) Sector will represent the level of infrastructure development (*if*) while the ratio of broader money to GDP or financial development index (*M2/GDP*) will proxy financial market development (*fd*). Summation of exports and imports expressed as a ratio of GDP [*(Exports+Imports)/GDP*] will proxy the degree of trade openness (*trade*).

The long run empirical model for the effect of FDI on Kenya's economic growth (rates of change) will, therefore, take the following form:

$$\begin{aligned}
 \mathbf{RGDPgrowth} = & \beta_0 + \beta_1 \Delta(\mathbf{GFCF/GDP}) + \beta_2 \Delta \mathbf{l} + \beta_3 \Delta(\mathbf{FDI/GDP}) + \beta_4 \Delta \mathbf{hk} + \beta_5 \Delta \mathbf{if} + \beta_6 \Delta \mathbf{fd} + \beta_7 \Delta(\mathbf{trade}) \\
 & + \beta_8 \Delta \mathbf{inf} + \beta_9 \Delta(\mathbf{fdi})(\mathbf{hk}) + \beta_{10} \Delta(\mathbf{fdi})(\mathbf{if}) + \beta_{11} \Delta(\mathbf{fdi})(\mathbf{fd}) + \beta_{12} \Delta(\mathbf{fdi})(\mathbf{trade}) + \epsilon
 \end{aligned}
 \tag{9}$$

In this model, that forms the basis for the empirical analysis for this study, notations are as explained below:

RGDP-Real GDP measured in Ksh. Million

GFCF/GDP- is expected to have positive relationship with the level of economic growth.

FDI/GDP- The relationship between FDI and economic growth is expected to be positive.

l- labour stock is represented by labour-force participation rate. ILO defines total labor force as economically active people aged at least 15 years. The relationship between labour-force participation and output is expected to be positive if labour has been engaged on productive activities or negative if labour has been engaged in unproductive activities.

hk- level of human capacity development measured as expenditure on education in Kenya Shillings (KES). A positive co-efficient is expected if human capacity development positively influences FDI-induced economic growth

if- level of infrastructure development is proxied by total government development vote . A positive co-efficient is expected if the level of infrastructure development positively influences FDI-induced economic growth

fd- ratio of broad money to GDP (M2/GDP). Broad money includes currency (notes and coins), cheque and saving accounts deposits, investments in financial market securities, mutual funds and other call deposits. A positive co-efficient is expected if the level of financial market development positively influences FDI-induced economic growth

trade- level of trade openness is proxied by the fraction of the sum of imports and exports in GDP [(Exports + Imports) /GDP]. Trade openness has a role in improving technological progress

(through competition), bridging foreign exchange gap and opening up the economy to international market. A positive co-efficient is expected if the level of trade openness positively influences FDI-induced economic growth

inf- inflation rate measured as percentage. Inflation represents macroeconomic environment of the economy. Lower inflation rate points is preferred to as it points to a more conducive environment for investment. It is expected that the relationship between inflation and the dependent variable is negative.

The parameters $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}, \beta_{11}, \beta_{12}$ represents the elasticities of; output, domestic investment, labour, FDI, human capital development, investment in infrastructure, financial markets development, openness to trade, inflation, interaction variables between FDI and human capital development $\Delta(\text{fdi})(\text{hk})$, infrastructure development $\Delta(\text{fdi})(\text{if})$, financial market development $\Delta(\text{fdi})(\text{fd})$, and trade openness $\Delta(\text{fdi})(\text{trade})$ respectively while ϵ is the stochastic error term.

From the foregoing, our coefficients of interest will be $\beta_3, \beta_9, \beta_{10}, \beta_{11}$, and β_{12} as they capture the growth effects of FDI directly and indirectly. Should β_3 be statistically significant and different from zero, then, FDI affects economic growth of Kenya. From theory, if the interaction term of any of the conditions is significantly positive, existence of that initial condition impacts positively on the FDI-Growth nexus.

3.6. Data and its Sources

Time-series secondary data was used to assess the effects of FDI on economic growth of Kenya over the period 1980 to 2015. Data to be considered in this study related to the time series observations of following variables: Real GDP, FDI inflows/GDP, GFCF/GDP, annual rates of inflation(consumer prices), labour force participation rate, M2/GDP and exports+imports of goods and services/GDP will be collected from World Bank Database, while data on development expenditure and government expenditure in education will be obtained from the various government publications including Economic Surveys and Statistical Abstracts.

3.7. Pre-estimation tests

3.7.1. Testing for Stationarity

One of the shortcomings associated with time series data (used in this study), is lack of independence of observations across time i.e. non-stationary series which leads to either spurious or inconsistent regression problems where null hypotheses end up being rejected while they ought to have been accepted. Stationary series have finite variance, experience transitory deviations from the mean and tend to return to its mean in the long run. That is to say that we aim at estimating variables which have their means and variances as well defined constants independent of time i.e. Stationary series. This will be done by application of Augmented Dickey-Fuller (ADF) unit root test.

3.7.2. Testing for Co-integration

(Abadir and Taylor 1999) states that co-integration when variables deviate from a certain relationship. In the long run, it is expected that deviations are corrected leading to constant differences between variables. According to (Engel and Granger 1987), the order of integration of a non-stationary time series determines the number of times it must be differentiated to achieve stationarity. We will use ADF to test for unit roots in the residuals. This will be tested on a null hypothesis that the residuals have unit roots i.e the series are non-stationary against alternative hypothesis that the residuals do not have unit tests (i.e. the series are stationary).

CHAPTER FOUR

4. EMPIRICAL RESULTS

Empirical results the analysis are presented in this chapter where descriptive statistics and diagnostic tests are discussed and regression results presented.

4.1. Descriptive Statistics

Descriptive statistics of real GDP (y), level of infrastructure development (x1), level of human capacity (x2), FDI (x3), gross fixed capital formation (x4), inflation (x5), financial development (x6), labour stock (x7), openness of the economy(x8), interaction between FDI and level of infrastructure (x9), interaction between FDI and financial development (x10), interaction between FDI and openness of the economy (x11), interaction between FDI (x12) and human capacity and interaction between FDI and inflation (x13) are presented in table 1.

Table 1: Descriptive Statistics

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
y	36	21319.64	7870.28	11339.01	38342.54
x1	36	90398.43	164283.3	2666.2	802740.1
x2	36	69214.24	80816.1	2520.4	284164.9
x3	36	0.61	0.62	0.04	2.53
x4	36	18.62	1.93	15.39	22.93
x5	36	12.44	8.75	1.55	45.98
x6	36	35.23	4.78	26.68	42.61
x7	36	70.73	4.27	65.1	76.3
x8	36	56.39	6.54	44.81	72.86
x9	36	100574.4	325347.2	453.25	1822220
x10	36	21.90	24.21	1.41	95.75
x11	36	34.12	37.12	2.24	184.34
x12	36	57005.08	128234.8	621.69	645054.3
x13	36	8.59	19.11	0.23	116.33

Source: Author's computation based on data from KNBS Publications and World Bank Database

The total observations considered in this study were 36 with 14 variables (one dependent and thirteen independent variables). Range of all the variables is determined by the difference between the maximum value and minimum value. For example the maximum value of FDI ratio to GDP 2.53 while the minimum is 0.04 giving a range of 2.49. The standard deviation shows the spread of the values from the mean and is important for comparison purposes. For example the data shows that interaction between FDI and level of infrastructure (x9) has a larger spread as compared to other variables. FDI (x3) has a standard deviation of 4.78, level of infrastructure development (x1) has 164283.3, financial development (x6) has 4.78 and openness of the economy (x8) has 6.54.

4.2. Correlation Matrix

Table 2: Correlation matrix

	y	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13
y	1.00													
x1	0.83	1.00												
x2	0.97	0.90	1.00											
x3	0.27	0.46	0.31	1.00										
x4	0.47	0.56	0.52	0.25	1.00									
x5	-0.24	-0.20	-0.27	0.20	-0.16	1.00								
x6	0.79	0.58	0.72	0.18	0.18	-0.14	1.00							
x7	-0.80	-0.45	-0.70	-0.06	-0.03	0.25	-0.79	1.00						
x8	-0.31	-0.36	-0.34	-0.03	-0.02	0.47	0.05	0.17	1.00					
x9	0.58	0.91	0.66	0.59	0.43	-0.16	0.40	-0.25	-0.35	1.00				
x10	0.37	0.56	0.41	0.99	0.27	0.16	0.29	-0.15	-0.05	0.67	1.00			
x11	0.17	0.31	0.19	0.97	0.16	0.33	0.15	-0.01	0.15	0.43	0.95	1.00		
x12	0.68	0.92	0.76	0.67	0.49	-0.19	0.47	-0.36	-0.37	0.96	0.75	0.51	1.00	
x13	-0.05	0.01	-0.06	0.70	-0.07	0.66	0.04	0.10	0.37	0.08	0.67	0.83	0.11	1.00

Source: Author's computation based on data from KNBS Publications and World Bank Database

From table 2, we observe the relationship existing between various variables used in this study. Multicollinearity would be considered present if the correlation coefficient was equal to or above 0.8 as it may lead to spurious regression. The study found that some pairs had a correlation of more than 0.8. as indicated in table 4.2. To correct that, the study applied step wise differencing to variables exhibiting this characteristic. There is a positive association between FDI ratio to GDP (x3) and capital formation (x4), inflation (x5), financial development (x6). On the other hand, there is a negative association between FDI ratio to GDP (x3) and labour stock (x7), openness of the economy(x8). Real GDP has positive association with level of infrastructure development (x1), level of human capacity (x2), FDI (x3), gross fixed capital formation (x4) and financial development (x6). Real GDP has negative association with inflation (x5), labour stock (x7) and openness of the economy (x8).

4.3. Diagnostic Tests

4.3.1. Test for Heteroscedasticity

Using Breusch-Pagan test results are as shown in table 3.

Table 3: Test for Heteroscedasticity

Breusch-Pagan test for heteroscedasticity
Ho: Constant variance
Variables: Fitted values of Real GDP
chi2(1) = 5.56
Prob> chi2 = 0.0184

Source: Author's computation based on data from KNBS Publications and World Bank Database

The results in table 3 reveal presence of heteroscedasticity since the p-value of 0.0184 is significant which leads to rejection of the null hypothesis. This will be corrected by use of robust standard error regression.

4.3.2. Serial correlation

Breusch Godfrey test was used in testing for serial correlation and results presented in table 4.

Table 4: Serial correlation

Breusch-Godfrey test for autocorrelation			
lags(p)	chi2	Df	Prob> chi2
1	7.518	1	0.0061
H ₀ : no serial correlation			

Source: Author's computation based on data from KNBS Publications and World Bank Database

The test results in table 4 reveal presence of serial correlation since the p-value of 0.0061 is significant thus leading to the acceptance of the null hypothesis. Serial correlation was corrected by use of robust regression.

4.3.3. Multicollinearity

Variance Inflation Factors (VIF) were examined to test for multi-collinearity. For VIF values greater than 10, multicollinearity is deemed to be present. The VIF are calculated as shown below and values presented in table 5.

Variance Inflation Factors

$$VIF = \frac{1}{1 - R^2}$$

Where VIF= variance inflation factor

R²= coefficient of determination

1/VIF= tolerance

Table 5: Multicollinearity

Variable	VIF	1/VIF
x1	216.93	0.004610
x2	131.02	0.007632
x3	1277.36	0.000783
x4	3.04	0.329241
x5	5.60	0.178591
x6	14.33	0.069784
x7	7.91	0.126472
x8	6.25	0.159893
x9	187.46	0.005335
x10	1465.05	0.000683
x11	733.17	0.001364
x12	245.99	0.004065
x13	66.20	0.015106
Mean VIF	335.41	

Source: Author's computation based on data from KNBS Publications and World Bank Database

From table 5, it is evident that level of infrastructure development (x1), level of human capacity (x2), FDI (x3) and financial development (x6) had VIF of more than 10 implying presence of multicollinearity. Gross fixed capital formation (x4), inflation (x5), labour stock (x7) and openness of the economy(x8) had VIF of less than 10 implying no multicollinearity. The problem of multicollinearity was solved through differencing of the affected variables.

4.3.4. Normality of the error term

Shapiro Wilk test was used and results are shown in the table 6. The null hypothesis was that the error terms is normally distributed against an alternative hypothesis that the error term is not normally distributed

Table 6: Test for Normality

Variable	Observations	W	V	z	Prob>z
Residual	36	0.90735	3.378	2.546	0.00545

Source: Author's computation based on data from KNBS Publications and World Bank Database

The probability value in table 6 is significant thus leading to rejection of the null hypothesis. This therefore implies that the residuals are not normally distributed. To remedy this, the study adopted log linear model.

4.4. Stationary Test

Stationarity means the variable is integrated of order zero or has no unit root. Presence of a unit root lead to spurious regression and renders inference (and forecasting) inapplicable. Augmented Dickey Fuller Test was run on the individual variables to establish presence or absence of unit roots and test results are as shown in table 7.

Table 7: Test for Stationarity in Levels

Variable	Test statistic	1% critical level	5% critical level	10% critical level
(lny)	0.898	-3.682	-2.972	-2.618
x1	9.340	-3.682	-2.972	-2.618
X2	4.712	-3.682	-2.972	-2.618
X3	-5.349	-3.682	-2.972	-2.618
X4	-2.331	-3.682	-2.972	-2.618
X5	-3.362	-3.682	-2.972	-2.618
X6	-1.259	-3.682	-2.972	-2.618
X7	-1.294	-3.682	-2.972	-2.618
X8	-2.869	-3.682	-2.972	-2.618
X9	8.476	-3.682	-2.972	-2.618
X10	-4.575	-3.682	-2.972	-2.618
X11	-6.272	-3.682	-2.972	-2.618
X12	1.461	-3.682	-2.972	-2.618

X13	-6.143	-3.682	-2.972	-2.618
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Source: Author's computation based on data from KNBS Publications and World Bank Database

Table 7 shows that all variables used in the study are non-stationary at levels except four namely FDI (x3), interaction between FDI and financial development (x10), interaction between FDI and openness of the economy (x11) and human capacity and interaction between FDI and inflation (x13). The non-stationary variables were differenced and the results are as shown in the table 8.

Table 8: Test for Stationarity (First Difference)

Variables	Test statistic	1% critical level	5% critical level	10% critical level
D1lny	-3.425	-3.689	-2.975	-2.619
D1x1	1.692	-3.689	-2.975	-2.619
D1X2	-4.363	-3.689	-2.975	-2.619
D1x4	-6.086	-3.689	-2.975	-2.619
D1x5	-6.647	-3.689	-2.975	-2.619
D1x6	-7.403	-3.689	-2.975	-2.619
D1X7	-1.233	-3.689	-2.975	-2.619
D1x8	-6.005	-3.689	-2.975	-2.619
D1x9	1.565	-3.689	-2.975	-2.619
D1x12	-4.694	-3.689	-2.975	-2.619

Source: Author's computation based on data from KNBS Publications and World Bank Database

Table 8 shows that log of real GDP (lny), level of human capacity (x2), gross fixed capital formation (x4), inflation (x5), financial development (x6), openness of the economy(x8) and interaction between FDI (x12) became stationary after first difference. This implied that these variable had one unit root or they were integrated of order one that is I (1). The other variables still had at least a unit root and were further differenced. The results are shown in table 9.

Table 9: Test for Stationarity (Second Difference)

Variables	Test statistic	1% critical level	5% critical level	10% critical level
D2x1	-4.028	-3.696	-2.978	-2.620
D2x7	-5.245	-3.696	-2.978	-2.620
D2x9	-4.246	-3.696	-2.978	-2.620

Source: Author's computation based on data from KNBS Publications and World Bank Database

Table 9 indicates that labour stock (x7) and interaction between FDI and level of infrastructure (x9) became stationary after second difference. Variable for level of infrastructure development (x1) was subjected to a third differencing and the results are as indicated in table 10.

Table 10: Test for Stationarity (Third Difference)

Variables	Test statistic	1% critical level	5% critical level	10% critical level
D3x1	-7.679	-3.702	-2.980	-2.622

Source: Author's computation based on data from KNBS Publications and World Bank Database

Table 10 revealed that level of infrastructure development (x1) became stationary after third difference.

From diagnostic and stationary checks results, not all variables were non-stationary and thus, there was no need to carry out tests for cointegration. An OLS regression was run on the stationary variables and the results are as shown in Table 11.

Table 11: OLS Regression Results

Dependent Variable : Log real GDP				
Method		: OLS model		
Sample		: 1980 - 2015		
Variable	Coefficient	Robust Standard Error	t	P>t
D3 x1	11600000	10100000	1.15	0.264
D1 x2	1040000*	30300000	3.42	0.003
x3	0.0248976	0.0688864	0.36	0.722
D1 x4.	0.0091044*	0.0023064	3.95	0.001
D1x5	0.0009766***	0.0005062	1.93	0.069
D1 x6	-0.0012461	0.0017621	-0.71	0.488
D2x7	0.0083023	0.0116516	0.71	0.485
D1 x8	-0.0006745	0.0008933	-0.76	0.459
D2 x9	12100000*	412000000	2.93	0.009
x10	-0.0036338*	0.0007806	-4.66	0.000
x11	0.0026224**	0.0011464	2.29	0.034
D1x12	-15600000***	843000000	-1.85	0.079
x13	-0.0020076**	0.0008013	-2.51	0.021
Constant	0.0194283*	0.0049929	3.89	0.001
R-squared = 0.7384				
Prob > F = 0.0000*				

Source: Author's computation based on data from KNBS Publications and World Bank Publications

4.5. Interpretation of the Results

From table 11, the marks *, **, *** indicate that tests were run at significance levels of 1%, 5% and 10% respectively. The results reveal that the coefficient of determination of 0.7384 and probability value of 0.0000, that is, 73.84 % of the variation in log of real GDP is explained by the explanatory variables in the model while the other proportion (26.16%) is explained by other

factors not considered by this study. Probability value of (0.0000) implies that the variables in the model are jointly significant in explaining log of real GDP at 1% level of significance.

The results further reveals that first difference of level of human capacity (x2), first difference of gross fixed capital formation (x4), second difference of interaction between FDI and level of infrastructure (x9) and interaction between FDI and financial development (x10) in level are individually statistically significant in influencing real GDP at 1 percent level of significance. In addition, interaction between FDI and openness of the economy (x11) in level and interaction between FDI and inflation (x13) in levels are individually statistically significant in determining real GDP at 5 percent level of significance. Further, the results revealed that first difference of inflation (x5) and first difference of interaction between FDI and human capacity (x12) are individually statistically significant in determining real GDP at 10 percent level of significance. The results further suggest FDI to be insignificant in influencing economic growth in Kenya.

4.6. Discussion of the Findings

This study explored effects of FDI and other variables on economic growth as captured by log of real GDP. The insignificant variables were not discussed as they do not contribute to any working policy of the study. From the results, if all factors were kept constant, real GDP as a proxy for economic growth in Kenya would be 1.01 million Kenyan Shillings (Antilog of 0.0194283).

The results revealed that holding all other factors constant, one percent increase in the first difference of level of human capacity development (x2) as proxied by government expenditure in education leads to approximately 104 Million KES increase in GDP of Kenya. This conforms to economic theory since human capacity development enhances the economy's ability to interact with technology and production methods which increases productivity. This finding in line with earlier study by (Tobin and Kosack 2006) which asserts that human development positively influences the organizational capacity to adopt new technologies, production functions, and economic outputs.

The coefficient of first difference of gross capital formation (x4) is positive and significant implying that holding all other factors constant one percent increase in the first difference gross

capital formation (x4) results to 0.91 % percent increase in log of real GDP of Kenya. This is in agreement with economic theory since investments expand productive capacities of the economy thereby increasing output as recommended (Kumar et al., 2010).

The coefficient of second difference of interaction between FDI and level of infrastructure (x9) is positive and significant. Holding all other factors constant, an increase in second difference of interaction between FDI and level of infrastructure (x9) results to an increase Kenya's real GDP by 1,210 Million KES. This in line with economic theory since development of infrastructure attracts investments which enhances the productive capacity of the economy as noted by (Balasubramanyam 1996) who asserted that good infrastructure facilities positively contribute to growth effect of FDI spillovers.

The coefficient of interaction between FDI and financial development (x10) at level is negative and statistically significant. This implies that an increase in interaction between FDI and financial development (x10) at level results to about 0.36 % decrease in log of real GDP of Kenya. This is contrary to economic theory and findings of an earlier study by (Hermes, 2003) which saw financial development as a source of financial capital needed for investment. However, such situation may be common in developing countries where only a small fraction of the population access benefits of the financial development. In addition, there may be an indication that money is in circulation in such economies when most of it is deposited in international banks by corrupt individuals.

The coefficient of interaction between FDI and openness of the economy (x11) at level is positive and statistically significant. An increase in interaction between FDI and openness of the economy (x11) at level results to about 0.26 % increase in log of real GDP of Kenya. This conforms to economic theory as the multiplier effect of trade leads to increased production to meet local and foreign demands. This finding is in agreement with a study by (Balasubramanyam 1996) which concluded that export orientation is a condition for FDI to impact positively on real GDP.

The coefficient of interaction between FDI and inflation (x13) at level is negative and statistically significant. This implies that an increase in interaction between FDI and inflation (x13) at level results to about 0.20 % decrease in log of real GDP of Kenya. This is consistent with economic theory because inflation makes factors of production and the production process expensive. The result is in line with (Liargovas and Angelopoulou 2014) where they concluded that a decrease in inflation is more likely to attract FDI consequently leading to economic growth.

The coefficient of first difference of inflation (x5) is positive and significant. A one percent increase in the first difference inflation (x5) results to 0.09 % percent increase in log of real GDP of Kenya. This is in line with economic theory since increase inflation increases economic growth up to a certain point beyond which its impact becomes negative. Low and steady levels of inflation enhances the capacity of the labor market to adjust in the event of a downturn, and reduces liquidity trap risks in stabilization efforts of monetary policy.

The coefficient of first difference of interaction between FDI and human capacity (x12) is negative and significant. This implies that holding all other factors constant one percent increase in the first difference interaction between FDI and human capacity (x12) results to a decrease in log of real GDP of Kenya. This do not conform to economic theory since human capacity development is expected to enhance capacity of local population to adapt new technologies, production methods and knowledge brought about by FDI.

CHAPTER FIVE

5. CONCLUSION AND POLICY IMPLICATIONS

This chapter presents a conclusion of the study and proposes policy recommendations based on the findings.

5.1. Conclusion

Foreign Direct Investment is important for any developing economy since they bridge the gap between domestic investment and domestic savings and facilitate technology and knowledge transfers from regions of abundance to regions of insufficiency, majorly, the developing economies. However, studies on the real impact of FDI on economic growth have yielded mixed results.

Successive governments in Kenya have put into place various deliberate interventions to attract FDI although the country has not benefited much from the FDI spillovers. This study therefore sought to investigate the effect of FDI and the intervening variables on economic growth in Kenya for the period 1980 to 2015. The author selected other variables in addition to FDI as guided by empirical studies in this line of study. The explanatory variables used in the study include level of infrastructure development, level of human capacity, FDI, gross fixed capital formation, inflation, financial development, labour stock, openness of the economy, interaction between FDI and level of infrastructure, interaction between FDI and financial development, interaction between FDI and openness of the economy, interaction between FDI and human capacity and interaction between FDI and inflation. Ordinary Least Square was used to estimate the impact of FDI and other variables on real GDP of Kenya.

Augmented Dickey Fuller test for stationarity of the variables revealed that some variables were stationary at levels while others had at least a unit root. The results revealed overall significance of the explanatory variables in explaining economic growth in Kenya at 73.84 percent. The results showed that FDI, by itself, was insignificant in influencing economic growth in Kenya

but had to interact with or have, as a pre-condition, infrastructure development and openness of the economy to yield the desired impact on economic growth.

The findings further revealed that first difference of level of human capacity, first difference of gross fixed capital formation, second difference of interaction between FDI and level of infrastructure, interaction between FDI and openness of the economy and first difference of inflation to be positive and individually significant in influencing economic growth in Kenya. On the other hand, interaction between FDI and: financial development; inflation; and human capacity (first difference) were revealed to be negative and individually statistically significant in influencing economic growth in Kenya.

5.2. Policy Implications

The study revealed a positive relationship between level of human capacity, gross fixed capital formation, interaction between FDI and level of infrastructure, interaction between FDI and openness of the economy and inflation to real GDP. Based on the study findings, the government of Kenya should focus on improving these variables that have a positive effect on economic growth. In addition, infrastructural development and trade openness interact positively with FDI. Accordingly, these two variables point to the requisite conditions for FDI induced growth and the government should therefore marshal all the effort to enhance them.

5.3. Limitations of the Study

The major shortcoming of this study is that it did not incorporate all the variables that influence economic growth as guided by other empirical studies due to lack of consistently recorded data. For instance, corruption is a key determinant of country's economic growth but data on this variable is only available for years beginning 1995 making it difficult to incorporate it in the study.

5.4. Areas for Further Study

Future researchers may investigate the effect of omitted variables to establish their real impact on FDI inflows and real GDP for instance, the effect of corruption and institutional quality on Kenya's economic growth.

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