EFFECTS OF TAXATION ON FOREIGN DIRECT INVESTMENT FLOWS IN KENYA

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Declaration

This research paper is my original work and has not been presented in any other University for examination.

Signature……………………………………Date…………………………………

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This research paper has been submitted for examination with my approval as University Supervisor.

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Dedication

I dedicate this report to my dear husband, Mr. Ndolo Francis and my children Nicole, Emmanuel, Israel for their material and moral support.

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List of Abbreviations/Acronyms

EPZs   Export Processing Zones

EU   European Union

FDI   Foreign Direct Investment

FKE   Federation of Kenyan Employers

KIA   Kenya Investment Authority

KIPPRA   Kenya Institute for Public Policy Research & Analysis

M & As   Mergers and Acquisitions

MNCs   Multinational Corporations

MNEs   Multinational Enterprises

OLS   Ordinary Least Squares

FGLS   Feasible Generalized Least Square

UNCTAD   United Nations Conference on Trade and Development

Abstract

This study focused on the relationship between corporate income tax and foreign direct investment. We applied Vector Error Correction Model on annual data for the period 1982-2015 to investigate the effect of Corporate Income Tax on Foreign Direct Investment. The results indicate that both Corporate Income Tax and Value Added Tax have a negative relationship with Foreign Direct Investment. In addition, trade openness and quality labour force was observed to have a positive impact on FDI inflows in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Foreign direct investment (FDI) can be defined as long term venture that incorporates the introduction of international funds into a company operating in a different nation other than that of the financier. The investor has a substantial degree of impact on the running of the firm and for practical functions the investor must have 10% of the level of ownership of the enterprise (UNCTAD, 2009). FDI can take several forms. First, is a Greenfield venture which entails setting up of a new activity in another nation. The other forms are mergers and acquisition (M &A) with an existent company in that different nation, a startup project, a joint venture with local partner, or partial acquisition through licensing (UNCTAD, 2009).

Beginning the middle of 1980s, the degree of surge of worldwide outflow of FDI has substantially exceeded that of world GDP, worldwide exports and domestic investment. The developed countries have continued to attract the bulk of the inflows (UNCTAD, 1998), but recent evidence indicates that the flow of FDI to developing countries has increased substantially. According to UNCTAD (2010), developed countries received an average of 29% of the total global flow of FDI in 2007. Given that the economies of most developing countries are small, even a small amount of foreign inflow makes a big impact in these economies. The increase of FDI to developing countries is due to multiple factors. These include sustained FDI inflows being experienced by most of the less developed countries (LDCs) and continued liberalization and privatization that is taking place in these countries (UNCTAD, 2005).

In addition, developing countries and emerging economies increasingly see FDI as a stimulant to the growth of local enterprises. This development can be through spillover effects whose presence can affect development of business enterprises in the host economy. Theoretically, FDI in developing countries is perceived not only as a source of capital inflow, but also as a vehicle for acquiring modern technology and the necessary managerial know how that these countries require for development. These are some of the reasons why most of the developing countries have continued to pursue domestic policies that encourage more FDI inflows. Most countries have gone beyond the removal of obstacles to inbound foreign investment and have embraced a further proactive avenue towards inviting FDI through the application of economic and monetary stimulus (UNCTAD, 2005).

1.1.1 Trends of FDI in Kenya

Kenya, similar to many countries experiencing economic growth was extremely cynical concerning the benefits of unlimited trade and ventures after gaining independence in 1963. Among other EA countries, she enforced commercial sanctions and capital regulations in 1970's and 1980's as a component of a policy of import-substitution industrialization geared at safeguarding local industries and preserving limited foreign trade resources. This inbound-view growth blueprint deterred business and FDI (Rodrik, 1998). In the period between 1990 and 1999 average FDI inflows to Kenya was US $17 million with a corruption index of 2.8. During the period between 2000 and 2007, average FDI inflows in millions of US dollars for Kenya rose significantly to $119 million yet the corruption index had plummeted to 1.6 (TI, 2012).

Majority of Kenyan FDI is export based and search for better markets. The most crucial FDI stimulators are the Kenyan and regional market size, governments and economic stableness in

both Kenya and its neighbouring countries and bilateral business accords regarding Kenya and other foreign nations. The most crucial FDI obstacles in Kenya are political and economic turbulence, delinquency and vulnerability, organizational aspects like corruption, licensing difficulties and work permits just to mention a few (Kinuthia, 2010). Consequent to the high disequilibrium in FDI inflows to Kenya, the FDI has not impacted the economy in spite of the amendments that have been initiated and the radical stimulus offered to international investors. From 1997–2001, FDI contributed approximately 0.6% of Gross Domestic Product, a ratio that was lower than that of Africa 1.9%. From the 1980s, Kenya has witnessed decreasing net inflows in comparison to its neighbors for instance Uganda and Tanzania. Whereas Kenya contributed approximately 87% of aggregate net FDI into East Africa during 1980s, by 2001 that portion had fallen to 21%, in comparison to Uganda's 40% and Tanzania's 36%. The nation has, thus, relinquished its competitive edge in drawing FDI (UNCTAD, 2016).

FDI in Kenya has majorly focused on the agricultural, production and service sectors. In 2001, there were several multinational corporation (MNC) affiliates carrying out business in Kenya. These MNC were approximately 114 in number. Majority of which were in the manufacturing and tertiary sectors with many pulled by availability of indigenous resources more so in agro-industry and the cement industry. The FDI inflows towards these areas begun in Western Europe and the USA. On the contrary, the international organizations based at the export processing zones (EPZs) are majorly from Sri Lanka and India, although US firms constitute 10% while United Kingdom companies make 2% of investment in EPZs (UNCTAD, 2016).

1.2 Statement of the Problem

Even though Kenya continues to attract Foreign Direct Investment, it is not as attractive as other countries in the region. This is despite the taxation reforms that have been undertaken to entice foreign investors (David, 2012). For example, UNCTAD (2016) notes that Kenya's performance in attracting foreign direct investment has deteriorated as compared to its neighbouring countries such as Uganda and Tanzania. According to the Federation of Kenya Employers (FKE) (2012), FDI inflows to Kenya began to decline compared to its two neighbors (Uganda and Tanzania) from around 1991 (Morisset and Pirnia, 2011).

In Kenya, empirical findings are only showing how high taxes adversely influence economic surge but not how high taxes can affect foreign direct investments (David, 2012; Diankov et al., 2009). This does not give a clear illustration on how direct tax structure can be determined to boost and promote FDI inflows. This study was focused on the relationship between corporate income taxes and FDI flows to Kenya. The study provides a better understanding of the relationship between taxation and its effect on foreign direct investment in Kenya.

1.3 Research Questions

I. How does corporate income tax rates affect FDI inflows in Kenya?

II. What policy recommendations does the paper provide?

1.4 Objectives of the Study

The main objective of this study was to analyze the effect of taxation on foreign direct investment flows in Kenya. Specifically, the study sought:

   I.   To examine how corporate income tax rate affects FDI inflows into Kenya;

   II.   To suggest relevant policy measures based on the findings.

1.5 Significance of the Study

The finding of this study will add to the understanding of externalities generated by FDI in Kenya. This provides a basis for policy makers in Kenyan countries and other developing countries to continue offering generous incentive packages to foreign investors in order to attract more FDI. This is due to direct and indirect benefits of FDI to the countries.

This study benefits the government in making policies. The policies main objective will be to establish the relationship between taxation and FDI flows and policy recommendations. The study is also significant to the scholars as it adds value to the body of existing literature on the subject. The scholars can use the findings of this study to further research in this area.

1.6 Organization of the paper

Following this chapter one, the remaining chapters of the study are organized as follows: Chapter two discusses theory and the related literature on the effects of taxation on foreign direct investment. The chapter ends with the summary of the literature and research gaps. Chapter three explains theoretical framework, the estimated model, description of variables, data type and

sources as well as the estimation process. While chapter four presents analysed results and discussion, chapter five provides summary, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter outlines documented information on taxation and FDI flows and attempts to relate this study to available literature. It also touches on the theoretical development in the economic analysis of the relationship of taxes on FDI flow. It starts with the theoretical literature followed closely by empirical evidence. The chapter ends with an overview of literature and research gaps.

2.2 Theoretical Literature

There is substantial economic theory literature that deals with FDI. Many theoretical forms on taxation and FDI flows only started to emerge from early 1950s. This section will review these theories. These theories make an effort try to elucidate why FDIs flow from one country to another, the choice of one type of entrance and the reason some nations are more prosperous in attracting FDI compared to others.

2.2.1 Dependency Theory

This theory postulates that foreign investments from developed nations at the nucleus of the world economic structure is detrimental to the perpetual economic prosperity of developing countries out in the hem (Raul Prebisch, 1949). It envisages that an entry to peripheral economies by big enterprises allows them to command resources that are normally used in a nations' development. Further, the theory suggests that developed countries take advantage of cheap labor from countries in the Third World to amass wealth. This type of capitalism maintains a universal division of labor that results into contractions, hindering progress and increasing

income disparities in least developed countries. Dependency theories assert that the least developed nations do not receive a fair compensation from the exploitation of these resources by the developed nations and thus this does not ease up their poverty crisis.

2.2.2 The Portfolio Diversification Theory

According to Harry (1952), the Portfolio Diversification Theory, investors consider the returns and risk in selecting their portfolio. The Portfolio Diversification Theory also describes the portion of FDI that is directed to a group of nations by collating it to the average return on those investments as determined by the variance of the average returns. A variant of this procedure was to estimate first the optimal geographic dispersion of resources of international firms based on case assessments, and making an assumption that firms progressively tune their outflow of FDI to meet that optimum circulation. A different thought of questioning was to determine if bigger firms with myriad of international activities shared less fluctuation in international profitability and the level of sales. The results from the tests provided only a fragile backing to the information diversification theory as chronicled in Hufbuer (1975) and Argwar (1980).

2.2.3 Marginal Efficiency of Investment (MEI) and Accelerator Theories

Marginal Efficiency of Investment measures the demand of business for investment decision. According to Keynes, (1936) a firm would decide to invest when amount of funds that are borne in carrying out investment decisions are less than the Marginal Efficiency of Investment (Internal Rate of return on additional investment). The Marginal Efficiency of Investment therefore is the rate of interest that discounts the current rate of an investment to zero. The greater the commercial rates of gain, the lower the investment while the lower the market rate of interest, the higher the investment.

The investment theory was later improved and the accelerator theory was born. Accelerator theory considers investment in terms of the progresses in the amounts of inputs. The higher the variation existence amidst capital stock and the expected capital stock, the higher the organization's cost of investment. According to Tobin, (1969) the decision to make alterations to the capital stock is dependent on the cost the organization. There is a need for enhancement of factors that impaired investment such as poor formal legislation, poor legal frameworks such as patents, price regulations, labour laws, tax policies and freeing of exchange rates regulations.

2.2.4 The Differential Rates of Return Theory

This theory was postulated by Lizondo (1950). Differential rates of return theory symbolize one of the earliest efforts to delineate FDIs flows. This hypothesis suggests that capital flows from nations having lower rates of profit to nations with higher rates of profit is a procedure that results to the equality of real rates of returns. The logic of this hypothesis is that organizations contemplating FDI act in a manner to associate the marginal profit and the value of capital. The hypothesis plainly makes assumptions of risk noninterference, making the rate of return the only determinant upon which the investment decisions are based.

According to Argwar (1980), risk noninterference in this case implies that investors consider domestic and foreign direct investment to be excellent substitutes or in general that direct investment in any country including the home country is a perfect substitute for direct investment in any other country. The differential rate of return theory fails to describe the reasons organizations engage in FDI as opposed to portfolio investments. Some of these loopholes are plugged by the diversification theory.

2.2.5 Mac Dougall –Kemp Theory

This is one of the first FDI theories proposed by Mac Douglas (1958) and later explained by Kemp (1964). Making an assumption of a two-nation's example between investing and hosting countries, value of capital being equal to its marginal productivity, they explained that capital moved from a country with more capital to the one with little capital, and through this avenue the marginal productivity of capital tended to be similar in these two nations. This results to enhancement in efficient application of assets that in turn leads to enhanced wellbeing.

In spite of the decreased production in the country where investment are made as a result of FDI outflows, national revenue remains the same since the country obtains returns on capital which is equal to the marginal productivity of capital multiplied by the value of international investment. With the revenue from international investment remaining high compared to decline in output, the investing nation continually invests in other countries since it benefits from higher national revenue compared to when it had not ventured to international investments. Similarly, the hosting nation too experiences a rise in national revenue due to increase in foreign investment inflow.

2.2.6 Eclectic Theory

Eclectic theory propounded by Dunning (1988), is a holistic, analytic approach for FDI and organizational issues of the MNCs relating to foreign production. Eclectic paradigm considers the significance of three variables i.e. OLI. The basic assumption of the eclectic paradigm is that FDI can be explained by a set of three factors: the ownership advantages of firms 'O', indicating who is going to produce abroad 'and for that matter, other forms of international activity' (Dunning, 1993) ; by locational factors 'L' 'influencing the where to produce and by the

internalization factor 'I' that 'addresses the question of why firms engage in FDI rather than license foreign firms to use their proprietary assets' (Dunning, 1993). The second condition of international production is that the company must be better off transferring its ownership advantage within the firm across borders, rather than selling it to a third party via licensing or franchising. This second factor is the internalization and has been defined by Dunning (1993) as a choice between investing abroad and licensing a firm to exploit O advantages possessed by the licensor.

The third condition of the eclectic paradigm is concerned with the 'where' of production. MNEs will chose to produce abroad whenever it is in their best interests to combine intermediate products produced in their home country which are spatially transferable with at least some immobile factors or intermediate products specific to the foreign country (Dunning, 1988). Some of the location advantages include factors endowment and availability, geographical factors or public intervention in the allocation of resources as reflected by legislation towards the production and licensing of technology, patent system, tax and exchange rate policies which a multinational would like either to avoid or to exploit (Dunning, 1977). Drawing on this in consistent with the fact that although scholars concentrated initially on factor endowments, especially labour costs and productivity (Krugman, P.R (1983) recently multinationals have increasingly focused on 'created assets' including knowledge-based assets, infrastructure and institutions of the host economy.

2.3 Empirical Literature Review

This section discusses empirical literature review on taxation and FDI flows. Most of the empirical studies in developing countries have concentrated mainly on determinants of FDI flows and very few studies have been done on taxation. Studies that have been conducted in developed and developing countries are reviewed.

Estache and Gaspar (2015) found out that expansive tax stimulus result in substantial income losses in comparison to the investment obtained. Equally, Boadway, Chua, and Flatters (2011) discovered that tax holidays are of small significance for the organizations under study, and Halvorsen (2010) showed that cost of return in backed projects are so huge that they would happen without stimulation.

Studies also revealed that taxes are typically not the most crucial element influencing investment. For instance, Summers (2011) asserts, drawing from observations of 200 influential firms in America that principal amassment will be of no effect indifferent of what the corporate tax rate states. This results are in opposition to the hypothetical suggestions that shifts in tax rates have an effect on FDI inflows. Hsieh and Parker (2010) provide confirmation that reducing taxes on withheld revenues improved the totality of finances accessible to obligated organizations, thus generating a financing growth in these firms. They asserted that in nations with imperfectly advanced fiscal transactions, the taxation of withheld revenues does away with domestic finances from few organizations where the marginal cost of these finances surpasses the actual interest value. Barro and Sala-i-Martin (2011) argued that nations that have rapid progressing economies such as Taiwan, Singapore, South Korea, Hong Kong, Botswana, Thailand, Ireland, Malaysia,

among others. These nations conversely had minimum marginal tax costs or reduced their maximum marginal tax costs halfway between 1979 and 2002.

Moreover, in a research involving 45 nations, Wei (2000) observed that reduction of corruption and CIT tax had approximately similar impact of 30% on FDI. Equally, an analysis of investors has revealed that the tax structure had less impact compared to a nation's base economical and organizational setting (OECD 1995, Wunder 2001). Wunder (2001), for instance, asserted that, in a research of 75 Fortune firms, only 4 of the firms identified tax elements as being very critical determinants of their investment choices.

Koen and Bartlodus (2002) did a study on labour productivity and used a cross section of firms rather than a panel analysis of the firms. The study used company data for 1084 Hungarian firms for the year 1997 to 1998. The main objective of the study was to find out whether foreign firms perform better than domestic firms, and if there were spillover effects of FDI within and between sectors. After controlling for selection bias and using Ordinary Least Squares (OLS), the study found that foreign firms are more productive than domestic firms from Hungary.

Karabegovic et al. (2014) discovered that huge marginal tax estimates lower individual's motivations to reach their maximum capabilities, to undertake entrepreneurship bets, and to develop and enlarge new ventures. Their discoveries indicated that huge and growing marginal taxes have adverse implications on fiscal development, workforce and capital creation. Vergara (2011) investigation made an attempt to tackle the matter of the relation between the organizational revenue tax amends and the progress of individual investments. It recounted that when organizational revenue tax was slashed from fifty to seventeen percent beginning mid-

1980s to late 1990s, individual ventures revealed an outstanding growth, rising from twelve to twenty two percent of GDP for the period 1984-86 and 1995- 97 respectively.

Bustos et al. (2009) study made up of a commission of 83 government owned companies resolved that taxes had very minimal impact on the expected capital accumulation since they get compensation due to the levy legislation assents for the discounting of accumulated gain and deflation. Romer and Romer (2007) examined the effect of developments in the rate of levies on economic practices. The results showed a forceful adverse implications of levy increments on investments. It was also discovered that enacted tax rises patterned to get rid of continual budget shortfalls had little output expenditures compared to other levy increments. Tatom (2007) examined the benefits of tax procedure for investments in Morocco and if there are favorable circumstances to spur fiscal development through tax amendments. The research revealed that huge organizational levy rates are inclined on increasing the rate of return on capital to companies and reduction of investments.

Djankov, Ganser and Ramalho (2009) undertook a research study in which 85 nations were sampled to assess the impact of corporation taxes on investments and a survey by examination of these nations from every continent to assess the impact of organizational levies on financial investments and venture capital. The observations showed affirmation that effectual organizational tax rates had a huge statistical significance and a negative effect on corporate investment and entrepreneurialism. Effectual corporate revenue tax was also connected with little investments in production, a huge unofficial economy and higher dependence on credit and not asset finance. Karumba (2009) examined the expanse to which organizational elements affected individual investment. The research resolved that, between the organizational elements that were given due attention for examination, tax control was of a critical value to individual investors.

Thus, an effectual tax control should have been established and effectively improved prior to liberalizing the economy of Kenya. Panagiota (2009) researched concerning the influence of tax stimulus on financial ventures, they observed that outcomes typically relied on the form of tax amendments under review.

2.4 Overview of Literature

From the literature on taxation and FDI flows, increases in revenue taxes while cutting down on consumption and property taxes is related with passive development over the long term. Also high corporate and income taxes reduce incentives for investments and risk takings by firms and individuals. But also, low taxes can encourage investment and risk taking only in the short run. This is because despite favourable conditions from low taxation businesses need also security, infrastructure and other social amenities to prosper. This can only happen if the government has enough resources to fund its expenditure which is taxation.

High organizational and revenue taxes adversely influence foreign direct investment. In Kenya, empirical findings are only showing how high taxes adversely influence economic surge but not how high taxes can affect foreign direct investments in a country. This does not give a clear illustration on how direct tax structure can be determined to boost and promote FDI inflows, there exists very little literature on the effects of taxation on FDI. This study will focus on the relationship of corporate and labour income tax with FDI flows to Kenya. The study aims to provide a better understanding of the relationship between taxation and its effect on foreign direct investment in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will outline the research design, theoretical framework, analytical model, estimable model, definition of variables and their expected respective sign, data source and data analysis.

3.2 Theoretical Framework

The study will employ Deveroux's Decision Tree propounded by Deveroux (2006). The author explains a simplified framework in which different choices faced by international companies in deciding about new investment are described. In the decision tree, there are four stages followed by multinationals in making investment decision. The first decision according to the author is the decision whether to invest at home and export or invest overseas. Taxation system at home is one of the factors which can influence this first decision according to this theory. In case the firm decides to invest overseas, it will have to make the second decision which is the optimal site for the investment. In stage two, the host-country's taxes play an important role in owing to the fact that international investors would prefer to locate their firms in places where operation costs are low. Therefore, tax rates are very important factor to be considered at this level. The third and fourth stages concerns levels of investments and how profits should be reallocated among locations respectively depending on the tax rates. This study is only concerned with stage two of the decision tree to analyze how tax rates in Kenya influences multinationals in locating their firms in the country.

There are different ways through which taxation can affect FDI. Easson (1999), argued that taxes are very important owing to their impact on production expenses and profits. This study also

argues that the nature of business may also affect the degree at which taxes impact on the FDI. In the first place, there is difference between export and market oriented investments, where the latter is affected less as compared to the former (export-oriented). According to this framework, taxation is not only the determinant of FDI and therefore, for a study to realize unbiased estimates, Deveroux (2006) argued that it is important to include all other possible factors, such as market size proxied by GDP following Easson (2004), who argued that market size can determine profitability of an enterprise. Lower barriers to trade (trade openness) was also shown to impact FDI. According to OECD (2000), economies that have less barriers to trade attract free movement of goods and capital across borders. Labour force and the cost of labour has an impact on FDI through efficiency and effectiveness in the production process (Easson, 2004).

3.3 Empirical Model

From the theoretical framework, factors such as GDP per capita, exchange rates, labour force, cost of labour, openness to trade and inflation also impact on FDI of a country. Based on this and the availability of data, the study estimated the following equation:

$$\log(FDI_t) = \alpha_0 + \alpha_1 GDPPC_t + \alpha_2 UNMPLRate_t + \alpha_3 logLabourforce_t + \alpha_4 CIT_t + \alpha_5 VAT_t + \alpha_6 INF_t + \alpha_7 \log oppeness_t + e_t \qquad (1)$$

Where

$\alpha's$ =are coefficients to be estimated

LogFDI = log of Foreign Direct Investment.

GDPPC= Gross Domestic Product per capita

UNMPLRate=Rate of unemployment

Log Labourforce = log of Total amount of experienced labour force in the country

CIT= Corporate Income Tax

VAT= Value added Tax

INF=Inflation

Log openness= log of Trade openness

e_t = error term where t represents time (years)

3.4 Definition of Variables and the Expected Signs

Table 1 presents definition of explanatory variables, how they were measured and their expected impact on the dependent variable (FDI).

Table 1:Variables

Variables	Description/measurement)	Hypothesized relation
FDI	Foreign Direct Investment	Is the dependent variable
GDPPC	GDPPC =GDP per capita, proxy for market size	Positive sign expected
Labour force	Refer to the total number of skilled labour, i.e Kenyans with post-secondary education.	Skilled labour force generally implies quality, and efficient workers who are projected to attract FDI
Trade Openness	$$Openness = (\frac{imports + exports}{GDP})$$	The higher the trade openness the higher the FDI
Inflation	INF= This is a yearly-end change in the CPI index on a monthly basis.	Inflation (INF), Inflation is expected to have a negative relationship with FDI
Corporate Income Tax	CIT =Refer to the tax rate that is imposed on taxable income of corporations, which is equal to corporate receipts less deductions for labour costs, materials, and depreciation of capital assets.	A negative relationship with FDI is expected.
Value Added Tax	VAT=this is value addition on an article or a good at different stages of production or distribution.	A negative relationship is expected
Unemployment Rate	UNMPL this is proxy for business cycles (the lows and highs of business in the country	Negative and positive signs are expected
Error term	e_t = error term where t represents time (years)	

3.5 Data Type and Source

The study used annual time series data from 1982 to 2015. The data was obtained from KRA, IMF, World Bank, KNBS, UNCTAD, Kenya's economic surveys and statistical abstracts.

3.6 Data Analysis

Time series data analysis methodology was adopted. Before the actual estimation, the study carried out the following pre-tests:

3.6.1. Unit Root Test

This test assumes that with time series data, good results occurs when the series is stationary otherwise it leads to spurious regression problems. A stationary time series occurs when there is Constance over time of both its mean and variance. Dickey Fuller τ (tau) test pioneered by Dickey and Fuller (1979) was used to test unit root. Null hypothesis of this test is that there is no unit root against the alternative hypothesis which states that there is unit root.

3.6.2. Testing for co integration

This concept was introduced by Granger (1981) and extended by Engel and Granger (1987). Non-stationary time series normally has this concept. A series is said to be co-integrated if a combination of two non-stationary series result in a stationary series. There are two main tests of co-integration used in this paper; Engel-Granger 2 step procedure and the Johansen test for co integration. For this study, Engel-Granger 2 step procedure was used.

3.7. Post Estimation Diagnostics

3.7.1. Autocorrelation Test

It occurs when the error term is correlated overtime. This may be due to unbiased coefficients and may lead to rejection of the existence of homoscedasticity since the standard errors are too small. The major tests for autocorrelation are the Durbin Watson (d) and Breush Godfrey test. The study used Breush Godfrey test because it avoids the restrictive failures of the d-test.

3.7.2. Test for heteroscedasticity

Heteroscedasticity occurs when the variance is different across observations. It leads to biased estimators. The various tests of heteroscedasticity include White General test, Breush Pagan test

and Szoreter's test. The Breush Pagan test was used to predict the constancy of the variance across observations.

3.7.3. Test of multicollinearity

It occurs when there is correlated error term overtime. The study used Variance Inflation Factors (VIF). For this test, values greater than 10 and 1/VIF values which are less than 0.10 is an indication of the presence of multicollinearity.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

Foreign direct investment is an important component of growth and development especially for the case of developing countries. Countries with huge FDI tend to grow and develop faster than those with less FDI. Foreign investors examine various factors in order to make a decision as whether to invest in the host country or not. According to the existing literature, tax rates are among the key determinants of the FDI investor's decisions. The study investigated how various macro-economic factors affect the level of FDI in Kenya with the main focus being on corporate income tax(CIT). This chapter therefore, presents both descriptive and econometric results on the effects of corporate tax on FDI in Kenya.

4.1 Descriptive Statistics

In this section, the study considered summary statistics (means, standard deviations, minimum (Min) and maximum (Max) values of all variables used as well as their normality (skewness) and pickiness (Kurtosis). In addition, the section also examines correlation matrix. To begin with, Table 2 presents summary statistics.

Table 2: Descriptive Statistics

Variable	Obs	Mean	S. D	Min	Max	Skewness	Kurtosis
FDI	34	-2.41	4.178	-1.54	12.87	-1.95	5.67
GDPPC	34	946.11	97.68	836.24	1133.46	0.50	1.94
Openness	34	2.69	4.47	1.43	7.66	-1.95	2.18
CIT	34	24.42	2.40	19.74	26.47	-1.32	3.03
VAT	34	5.68	6.63	2.26	18.67	1.49	3.25
INFindex	34	9.05	3.99	1.9	16.2	0.09	2.30
UNMPL	34	8.39	3.67	4.89	14.6	-1.39	4.79
Labourfo	34	8.64	1.47	7.07	11.22	-2.16	5.65

Source: Research data

According to statistics from Table 2, the average net FDI for the period of this study was -2.41 and it ranged between a minimum of -1.54 and a maximum of 12.87 million. The maximum GDP per capita was 1133.46 USD, while the minimum was 836.24 during the study period. The same results indicate that an average rate of trade openness was 2.69 with a standard deviation of 4.47 but ranging between 1.43 and 7.66. During this period (1982-2015), the average corporate income tax (CIT) was 24.42 with a standard deviation of 2.40. The same results show that CIT ranged between 19.74 and 26.47. Kenya maintained an average of 5.68 VAT with a standard deviation of 6.63 but ranging between 2.26 and 18.67. The inflation mean (9.05) during this period was relatively high with a standard deviation of 3.99 but oscillating between 1.9 and 16.2 while the mean of unemployment rate (8.39) deviated by 3.67 but ranged between 4.89 and 14.6. The average Kenya's labour force ranged between 7.07 and 11.22 million people with a mean of 8.64. The study used the mean-based coefficients of skewness and kurtosis to test the normality

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of variables used. Skewness measures symmetry of probability distribution of a variable about its mean and normally distributed variables are expected to range between -2 and +2. On the other hand, Kurtosis was expected to range between -3 and +3 if data was normally distributed. Skewness results show that FDI, Openness, CIT, UNMPL and labour force are negatively but normally distributed while inflation, GDPPC and VAT are normally and positively distributed. Regarding kurtosis, FDI, GDPPC Openness, CIT and VAT were picked at 5.67, 1.96, 2.18, 3.03 and 3.25 respectively while inflation, unemployment rate and labour force were picked at 2.30, 4.79 and 5.65 respectively.

4.2 Correlation Matrix

Table 3 below presents correlation matrix between the dependent variable (FDI) and the explanatory variables (Openness, CIT, VAT, INFindex, UNMPLRate and labourforce).

Table 3: Correlation Matrix

	FDI	VAT	Openness	CIT	INFindex	labourforc	UNMPLRate	GDPPC
FDI	1.000							
VAT	-0.8111	1.000						
Openness	0.3721	-0.0391	1.000					
CIT	0.7039	-0.4561	0.3674	1.000				
INFindex	-0.0482	-0.192	0.0368	0.0453	1.000			
labourforce	-0.9319	0.8008	-0.5778	-0.5989	-0.0597	1.000		
UNMPLRate	-0.0949	0.1405	0.0497	-0.1918	-0.0911	0.0767	1.000	
GDPPC	-0.81	0.9447	0.0664	-0.3716	-0.0792	0.7606	0.0992	1.000

Source: Research data

This matrix tests the relationship between dependent variable and the explanatory variables. The matrix also helps to determine which variables best explain the dependent variable. The results from Table 3 indicate that trade openness, VAT, INFindex, Labourforce, UNMPLRate and

GDPPC are negatively related with the dependent variable (FDI) while CIT, and trade Openness were found to be positively related to FDI.

4.3 Econometric results

4.3.1 Unit root test

This test is normally used to check for the non-stationarity of time series which is a critical problem in empirical analysis. Non-stationary of variables leads to statistical inference problems which further give meaningless results. The test therefore assumes that logical interpretation of time series data results will only occur when the series is stationary otherwise it leads into spurious regression problems. The first step in the analysis of time series data is to test for the stationarity of the variables.

The study employed Augmented Dickey Fuller (ADF) test to examine stationarity of the series. This test aims at testing the null hypothesis, p=0 and the alternative hypothesis, p<0. It states that in computation if the t value is greater than the DF critical value in absolute values then the H_0 hypothesis is rejected hence the series is stationary and the vice versa is also true.

The ADF test has three models; the intercept only model, the intercept and trend model and the suppressed intercept and trend model. For the variable to be termed as stationary, the t value must be greater than the critical values consistently in the three models. The L value has also to be negative consistently in the three models. Table 4 presents the results of the ADF test.

Table 4: Unit root results

Variable	No.lags	No. diff	Intercept only	Intercept and trend	Suppressed intercept and trend
LogFDI	0	1	-5.427	-5.493	-5.409
LogOpenness	0	2	-7.723	-7.704	-7.826
CIT	0	1	-5.789	-7.704	-7.826
VAT	0	1	-5.334	-5.367	-5.344
INFindex	0	1	-8.321	-8.282	-8.441
LogLabourfo	0	1	-5.561	-5.573	-5.595
UNMPL	0	1	-11.757	-11.528	-11.964
GDPPC	0	0	-0.129	-0.2254	0.0077

Source: Research data

The study first conducted ADF test on all the variables and found that their t statistical values in all the models were less than the t critical values in all the significant levels. Hence, the study could not reject the null hypothesis which states that there is unit root or the variables are non-stationary. To correct this, the study differenced the variables up to the level where all the variables were stationary in all the models. Table 4 indicates that all variables apart from the logopenness and GDPPC were differenced only once. This then implied that stationarity variables occurred at different levels of differencing. From the table, the study could conclude that all variables are stationary. This is because the t values in all the models are greater than the t critical values at 1%, 5%, and 10%. Due to the presence of unit roots as indicated by the first ADF test before differencing, the study considered a co-integration test as necessary.

4.3.2 Co-integration test

Two or more variables are said to be co-integrated if they have a long run equilibrium or relationship between them (Guajarati 2004). Differencing of variables to attain stationarity status leads to loss of long term properties.

To carry out this test, Engel-Granger 2 step procedure was used. First, an OLS regression equation was estimated followed by prediction of residuals from non-stationary variables. Secondly, ADF test was applied to residuals and the results of this test are summarized in Table 5.

Table 5: Co-integration results

	test statistic	1% critical value	5%critical value	10%critical value
Z(t)	-6.231	-3.743	-2.997	-2.629

P value Z (t) =0.0000

From Table 5, the absolute test statistic value was greater than the absolute critical values in 1%,5% and 10% levels of insignificance. The study therefore had to reject null hypothesis which states that there is no co integration. The study hence concluded that the variables were co-integrated. This implied the use of Vector Error Correction Model (VECM). Before running the VECM model some post tests were conducted such as autocorrelation, heteroscedasticity as well as the test for multicollinearity.

4.4 Auto-Correlation Test

Auto-correlation occurs when the error term is correlated over time. It refers to the correlation of a time series with its own past and future values. Auto-correlation complicates the application of statistical tests by reducing the number of independent variables. The major tests that were carried out for this test were the Durbin Watson and the Breush Godfrey test.; the results (below) proved the presence of serial correlation.

Durbin-
Watson d-   (7, 32) =
statistic   2.320065

Breusch-Godfrey LM test for autocorrelation

lags(p)	chi2	Df	prob>chi2
1	2.54	1	0.11

Source: Research data

4.5 Test for Heteroscedasticity

Heteroscedasticity occurs when the variance is different across observations; it can lead to biased estimators. The study employed Breush Pagan to predict the constancy of the variance across observations. The null hypothesis states that there is constant variance which means there is no heteroscedasticity. The test on the variables had a P value of less than 5% which was 0.9755 which led to the acceptance of the null hypothesis; illustrating the absence of heteroscedasticity.

4.6 Test for multicollinearity

A post diagnostic tests for multicollinearity was undertake using Variance Inflation Factors (VIF). For this test, VIF values greater than 10 and 1/VIF values which are less than 0.10 is an indication of the presence of multicollinearity. The results of this test are shown in Table 6.

Table 6:Variable Inflation Factors (VIF)

Variable	VIF	1/VIF
VATD1	2.02	0.49
CITD1	1.56	0.64
logLabourf~1	1.56	0.64
logopennes~2	1.33	0.75
UNMPLRr~1	1.32	0.76
INFinde~1	1.07	0.93
Mean VIF	1.48	

Source: Computed from research data

The results as presented in Table 6 show that there is no multicollinearity because the variance inflation factors are all less than 10 and the tolerance values (1/VIF) are all greater than 0.1. This was realized after dropping GDPPC due to high multicollinearity index of 24.23.

4.7 Vector Error Correction Model.

The co-integration results confirmed the existence of co-integration. Therefore, the VECM was used to obtain both the short run relationship as well as the long run relationship of the equation. The VECM implemented the Johansen approach for estimation of the parameters of the VECM. The study opted for the first model which was the target because it had the dependent variable picked first and all the independent variables following. Tables 7 and 8 displays the results of this model.

Table 7:The VECM 1 results

	Coef.	Std. Err	z	P>|z|	[95% Conf.
D_logFDID1 _ce1					
L1.	-3.7950	0.65827	-5.77	0.000	-5.085216
logFDI					
LD	2.04931	0.43997	4.66	0.000	1.1869
LogopennessD1D1					
LD.	0.009967	.0019689	5.06	0.000	.0061088
CIT					
LD.	-0.051132	0.0063	-8.07	0.000	-.0635532
VATD1					
LD	-5.97e	9.164	0.900	-6.03	0.000
INFindex D1					
LD.	-2.21e	0.92	2.40e7	07	-0.92
logLabourforceD1					
LD.	48.20624	10.10928	4.77	0.000	28.392
UNMPLRrateD1					
LD.	1.21e+07	6951713	1.75	0.081	-1478864
_cons	-2.04e+07	2.54e +0	0.80	0.422	-7.02e+07

With this model (vector error correction), the study can estimate both the short run causality and the long run causality. Long run causality is confirmed if the error correction term (ECT) is significant and the sign is negative. From the model, the ECT is -3.795015 and it is statistically significant at 1% confidence level. Therefore, the study concluded that there is long run causality which runs from the independent variables to the dependent variable.

Table 8: VECM 2 results

Beta	Coef.	Std. Err.	Z	P>|z|	(95% Conf.
_ce1					
logFDID1	1.000	.	.	.	.
LogopennessD1D1	0.00310	2.05e+08	1.5e+05	0.000	0.00310
CITD1	-0.00701	6.64e+07	1.1e+04	0.000	-0.0070
VATD1	-1.83e+0	225.7976	-8.1e+04	0.000	-1.83e+07
INFindexD1	6.117	2812.978	2.17	0.030	604.3982
logLabourforceD1	17.30597	0.0001	1.6e+05	0.000	17.30576
UNMPLRrateD1	2.13	503.60	4.4e+04	0.000	2.13e+07
_cons	1.24e+09	.	.	.	.

From Table 8, all the dependent variables are statistically significant at 1%. However, the independent variables had different effects on the dependent variable. Some affected the variable positively while others affected it negatively. The overall equation was therefore expressed as:

$$LogFDI = 1.24e + 09 + 2.13UNMPL_t + 17.30logLabourforce_t - 0.00701CIT_t - 1.83e + 07VAT_t + 6.117INF_t + 0.00310\ log\ oppeness_t + e_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

The results for unemployment rate show a significant, strong and positive relationship with FDI. These indicates that a unit increase in unemployment rate in Kenya increases foreign direct investment by 213%. The reason behind this could be that at a higher level of unemployment, labour becomes cheap and this could attract FDI to enjoy low cost of doing business. The coefficient of experienced labour force, is also positive and strongly related to FDI. This means that an increase in the quality of labour force by 1% increases FDI in Kenya by 17.30%. Since

multinationals companies are perceived to be highly competitive, they will prefer to be located where quality of workmanship is high. Easson (2004) made similar argument that quality human capital has a positive impact on FDI through efficiency and effectiveness in the production process.

The study has also established a positive and a highly significant relationship between FDI and trade openness. According to the results, a unit increase in trade openness leads to a 0.3% increase in in the FDI. This indicates that trade openness has less but positive impact on FDI. Trade openness denotes the ease at which foreigners are able to start and run business in the host country. These findings then mean that the higher the trade openness index the more an economy can attract FDI or also the more the locals can invest abroad. Similar observations were made by OECD (2000) where it can be argued that economies that have less barriers to trade attract free movement of goods and capital across borders.

The focus of this study was the effect of corporate income tax (CIT) on FDI inflows in Kenya. The results as presented in Table 8 show that a unit change in CIT leads to 0.7% decrease in FDI. This implies that lower CIT in Kenya increases FDI inflows. A similar observation is made with respect to VAT where a unit increase in VAT leads to 183% decrease in FDI. In comparing the impact of CIT and VAT, the study concludes that VAT has greater impact than CIT. Other studies which have established similar findings include: Wei (2000), Karabegovic et al. (2014) and Bustos et al. (2009). For instance, Wei (2000) observed that a unit decrease in corporate income tax leads to an increase in FDI by 30%. Furthermore, the study has established that a unit increase in inflation leads to an increase in FDI by 611%. This observation is inconsistent with other studies which established a negative relationship.

CHAPTER FIVE

SUMMARY OF RESULTS, CONCLUSION AND POLICY RECOMMENDATIONS

5.0 Introduction

The objective of the study was to determine the effect of corporate income tax on FDI inflows in Kenya. In this chapter, a summary of the results in line with the objective, the conclusion and policy recommendations are presented.

5.1 Summary of Results

Business environment is an important aspect of a country's economy whereby a conducive climate will attract investments both within and without while unconducive business climate will discourage. Tax rates are an important component of the business environment such that if left unchecked, they can stifle investments in the country. This paper was aimed at investigating the effect of corporate income tax on FDI inflows in Kenya. The study employed time series methodology of annual data from 1982-2015.

According to the results, corporate income tax has an inverse and highly significant relationship with FDI inflows into Kenya. Similar observations were made for VAT although the impact of VAT was greater as compared to that of CIT. On the other hand, the study observed that trade openness, labour force and unemployment rate were positively related to FDI. Finally, Inflation, though significant, it was positively related to FDI.

5.2 Conclusion

From the results and subsequent discussions, this paper concludes that corporate income tax and value added tax has a negative impact on the FDI inflows in Kenya. In addition, results indicate

that unemployment rate, quality labour force, and openness to trade have a positive effect on FDI inflows in Kenya.

5.3 Policy recommendations

The effect of tax on FDI in Kenya is evident from the findings of this study. The paper therefore recommends to the government to establish mechanisms which could lead reduction of CIT and VAT. This could happen without necessarily reducing tax revenue but enhancing efficiency in taxation.

Secondly, the study calls upon policy makers to put in place mechanism to improve human capital due to its positive influence on FDI inflows. In addition, trade openness should be improved to increased FDI inflows in Kenya.

Finally, a further study needs to be carried out to find out if the results of this study can hold over time. The country has been receiving FDI since pre-independence times to date, yet the period of study is only a short 34 years. This may make the finding not to be assumed universal, but, a research can be done to determine how CIT, VAT, unemployment rate, labour force, trade openness, and inflation affects FDI for a longer period.

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Appendix 1: Correlation matrix

```
. correlate LogFDID1 VATD1 LogoppenessD1D1 CITD1 INFindexD1 LoglabourforceD1 UNMPLRrateD1 GDPPC
(obs=33)
```

	LogFDID1	VATD1	Logopp~1	CITD1	INFind~1	Loglab~1	UNMPLR~1	GDPPC
LogFDID1	1.0000							
VATD1	-0.8111	1.0000						
Logoppenes~1	0.3721	-0.0391	1.0000					
CITD1	0.7039	-0.4561	0.3674	1.0000				
INFindexD1	-0.0482	-0.1920	0.0368	0.0453	1.0000			
Loglabourf~1	-0.9319	0.8008	-0.5778	-0.5989	-0.0597	1.0000		
UNMPLRrateD1	-0.0949	0.1405	0.0497	-0.1918	-0.0911	0.0767	1.0000	
GDPPC	-0.8100	0.9447	0.0664	-0.3716	-0.0792	0.7606	0.0992	1.0000

Appendix II: Co-integration

```
. dfuller e,lags(0)


Dickey-Fuller test for unit root                 Number of obs  =        33


                        ————————— Interpolated Dickey-Fuller —————————
                  Test        1% Critical        5% Critical       10% Critical
               Statistic         Value              Value              Value

  Z(t)           -6.577           -3.696             -2.978             -2.620


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

Appendix III: Variance Inflation Factors results

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
       VATD1 |      2.02    0.494442
 logopennes~2 |     1.56    0.639269
 logLabourf~1 |     1.56    0.642055
   INFindexD1 |     1.33    0.753442
 UNMPLRrateD1 |     1.32    0.759509
        CITD1 |     1.07    0.933894
-------------+----------------------
    Mean VIF |      1.48
```

Appendix IV: Autocorrelation results

```
. estat dwatson


Durbin-Watson d-statistic(  7,    32) =  2.320065


. estat bgodfrey


Breusch-Godfrey LM test for autocorrelation
```

lags(p)	chi2	df	Prob > chi2
1	2.540	1	0.1110

```
                    H0: no serial correlation
```

Appendix V: Heteroscedasticity results

. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

      Ho: Constant variance

      Variables: fitted values of logFDID1

      chi2(1)   =   0.00

      Prob > chi2 = 0.9755

Appendix VI: VEC Model1

```
. vec LogFDID1 VATD1 LogoppenessD1D1 CITD1 INFindexD1 LoglabourforceD1 UNMPLRrateD1

Vector error-correction model

Sample:  1985 - 2015                          Number of obs    =         31
                                              AIC              =    165.742
Log likelihood = -2500.001                    HQIC             =   166.7824
Det(Sigma_ml)  =  2.63e+61                     SBIC             =   168.9338

Equation          Parms     RMSE    R-sq      chi2     P>chi2
────────────────────────────────────────────────────────────
D_LogFDID1            9    1.4e+08  0.8854   169.9724   0.0000
D_VATD1               9    6.64188  0.7029    28.95012  0.0007
D_LogoppenessD~1      9    4.6e+10  0.7791    77.58807  0.0000
D_CITD1               9    3.2e+09  0.8407   116.1136   0.0000
D_INFindexD1          9    .732556  0.7300    55.27056  0.0000
D_Loglabourfor~1      9    7.2e+06  0.9662   629.4273   0.0000
D_UNMPLRrateD1        9    2.63156  0.8488    70.11217  0.0000
────────────────────────────────────────────────────────────
```

```
  .
                      |    Coef.   Std. Err.      z    P>|z|    [95% Conf. Interval]
             ─────────┼────────────────────────────────────────────────────────────
   D_LogFDID1         |
         _ce1         |
          L1.         | -3.795015   .6582778   -5.77   0.000   -5.085216   -2.504815
                      |
      LogFDID1        |
          LD.         |  2.049317   .4399743    4.66   0.000    1.186983     2.91165
                      |
        VATD1         |
          LD.         | -5.97e+07    9899164   -6.03   0.000   -7.91e+07   -4.03e+07
                      |
 LogoppenessD1D1      |
          LD.         |  .0099679   .0019689    5.06   0.000    .0061088    .0138269
                      |
        CITD1         |
          LD.         | -.0511322   .0063374   -8.07   0.000   -.0635532   -.0387111
                      |
    INFindexD1        |
          LD.         | -2.21e+07   2.40e+07   -0.92   0.358   -6.90e+07    2.49e+07
                      |
 LoglabourforceD1     |
          LD.         |  48.20624   10.10928    4.77   0.000    28.39242    68.02007
                      |
    UNMPLRrateD1      |
          LD.         |  1.21e+07    6951713    1.75   0.081    -1478864    2.58e+07
                      |
        _cons         | -2.04e+07   2.54e+07   -0.80   0.422   -7.02e+07    2.94e+07
             ─────────┼────────────────────────────────────────────────────────────
                      |
```

Appendix VII: VEC Model 2

```
Cointegrating equations


Equation        Parms    chi2    P>chi2
─────────────────────────────────────────

_ce1                6   3.00e+11  0.0000
─────────────────────────────────────────


Identification:  beta is exactly identified

              Johansen normalization restriction imposed
────────────────────────────────────────────────────────────────────────────
         beta │    Coef.   Std. Err.     z    P>|z|    [95% Conf. Interval]
──────────────┼─────────────────────────────────────────────────────────────
_ce1          │
     LogFDID1 │       1        .         .      .         .           .
       VATD1  │  -1.83e+07  225.7976  -8.1e+04  0.000  -1.83e+07   -1.83e+07
LogoppenessD1D1│  .0031082   2.05e-08   1.5e+05  0.000   .0031081    .0031082
       CITD1  │ -.0070199   6.64e-07  -1.1e+04  0.000  -.0070212   -.0070186
    INFindexD1│  6117.734   2812.978      2.17  0.030   604.3982    11631.07
LoglabourforceD1│ 17.30597  .0001092   1.6e+05  0.000   17.30576    17.30619
   UNMPLRrateD1│  2.13e+07   503.6012   4.2e+04  0.000   2.13e+07    2.13e+07
        _cons │  1.24e+09        .         .      .         .           .
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