

**MACROECONOMIC DETERMINANTS OF FOREIGN DIRECT  
INVESTMENT INFLOWS IN KENYA**

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**DECLARATION**

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**DEDICATION**

I dedicate this thesis to the greatest inspiration of my life- mama, Dad, my loving family Diana and Brielle, to my siblings; Scola, Koech, Kibet, Eric and Andrew.

## **ACKNOWLEDGMENT**

It is an honour to acknowledge the almighty God for enabling me to accomplish the wonderful work in developing my thesis. I wish to thank my supervisors Dr. Richard Siele and Dr. Joel Tuwey for their sacrifice and the valuable time they put in going through this work and giving me guidance throughout. I also wish to acknowledged great counsel and scholarly input by the Head of department, Dr Kiano. I also wish to acknowledge the invaluable support accorded to me by my friends Kiprono Serem, Ruttoh Naftaly and Caro Murgor. This work was greatly inspired and supported by my family and I shall forever remain indebted to them.

## ABSTRACT

Foreign direct investment provides capital for domestic investments, creates employment opportunities, and facilitate transfer of managerial skills and technology which significantly contributes to economic development. Over a decade, despite all these advantages, Foreign Direct Investment inflows has been decreasing in most African states including Kenya. The net FDI inflows in Kenya has been declining and highly volatile despite friendly economic environment and improved polices implement to attract and retain FDI as well as accelerate her economic development. This study attempted to examine the macroeconomic determinants of foreign direct investment inflows in Kenya. The specific study objectives were to determine the effect of exchange rate, infrastructure development, inflation, level of technology, and GDP growth on FDI inflows in Kenya. The study was guided by Neoclassical Theory of investment, Purchasing Power Parity and Accelerator theory of investment. Parameters were modelled using Generalized Method of Moments. Explanatory research design was employed as the study utilised annual time series data which were sourced from World Bank spanning from the year 1980-2020 The study conducted various prerequisite time series test beginning from the stationary property of the data and assumptions of multivariate regression such as normality, heteroskedasticity, auto correlation and multicollinearity. Results indicated that Kenya experienced a decline in foreign investments. Similar to year 2000 and 2010. There is some years Kenya have had a negative FDI inflows in the year 1990 and 199 and a slight improvement from 2012. All the series were stationary at levels except level of technology that attained stationarity after first difference. Inferentially, the number of moments GMM estimation were 6 which is same as the number of parameters implying the estimators were exactly identified. Exchange rate was negative and significant to influenced FDI at 222.2% ( $\beta = -2.222, p\text{-value} = .001 < .05$ ). Furthermore, level of technology and infrastructural development and were positive and significant factors with respective percentage of 121.4% ( $\beta = 1.214, p\text{-value} = .009 < .05$ ) and 180.6% ( $\beta = 1.806, p\text{-value} = .000 < .05$ ). Inflation and GDP growth did not show any significance, but they had positive effect at 53.9% ( $\beta = .539, p\text{-value} = .334 > .05$ ) and 12.4% ( $\beta = .124, p\text{-value} = .698 > .05$ ) respectively. Study concludes by stating that foreign direct investment (FDI) is attracted by a strong currency that has the potential to grow. Infrastructural development and high level of technology attracts foreign investors which increases FDI inflows thus contributes to the growth and development of Kenya's economy. Therefore, the study focuses that the results are of great importance to the government and policy makers in understanding several factors that would affect the foreign direct investment inflows in Kenya.

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**OPERATIONA DEFINITION OF KEY TERMS**

<b>FDI</b>	: The net inflows of investments. It is an investment in the form of a controlling ownership in a business in one country by an entity based in another country (Bjorvatn, 2000)
<b>Exchange Rate</b>	: The value of a nation's currency in terms of the currency of another nation (Musyoka,& Ocharo, 2018))
<b>Infrastructural Development</b>	: Amount of money allocated to infrastructural development (Ly, Esperança, & Davcik, 2018)
<b>Inflation</b>	: The quantitative measure of rate of rise of average prices where a unit currency effectively buys less than it did in the prior period (Shaikh, Shaikh, & Mirza, 2019)
<b>Level of Technology</b>	: The quantum and quality of industrially manufactured devices, tools, roads and there equipment together with software Gkatzoflias, D., Mellios, G., & Samaras, Z. (2013).
<b>GDP Growth</b>	: Is the annual growth of monetary value of all goods and services made within a country during a specified period (Musyoka,& Ocharo, 2018)

**LIST OF ABBREVIATION**

<b>COMESA</b>	Common Market for Eastern and Southern Africa.
<b>DF</b>	Dickey Fuller.
<b>EXR</b>	Exchange rate.
<b>FDI</b>	Foreign Direct investment.
<b>GDP</b>	Gross Domestic Product.
<b>GMM</b>	Generalized Method of Moments.
<b>GOK</b>	Government of Kenya
<b>IFD</b>	Infrastructure Development
<b>INFL</b>	Inflation.
<b>KNBS</b>	Kenya National Bureau of Statistics.
<b>PPP</b>	Purchasing Power Parity
<b>TEC</b>	Level of technology.
<b>UNCTAD</b>	United Nation Conference on Trade and Development.
<b>US</b>	United States.
<b>VIF</b>	Variance Inflation Factor.
<b>WBD</b>	World Bank Data.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Overview**

This chapter outlines the background, statement of the problem, research objectives, hypotheses, significance, and the scope of the study.

#### **1.2 Background of the Study**

Foreign Direct Investment can be defined as an investment made to acquire a long-term investment in a foreign nation enterprise with the view of having a voice in the enterprise's management (Bjorvatn, 2000). A foreign direct investment (FDI) is an investment in the form of a controlling ownership in a business in one country by an entity based in another country. FDI comprises not only merger and acquisition and new investment, but also reinvested earnings and loans and similar capital transfer between parent companies and their affiliates. Countries could be both host to FDI projects in their own country and a participant in investment projects in other countries. A country's inward FDI position is made up of the hosted FDI projects, while outward FDI comprises those investment projects owned abroad.

Economists have argued that FDI significantly influences economic growth by increasing the amount of capital per person. According to Bengoa and Sanchez-Robles (2003), even though FDI is positively correlated with economic growth, the host country require minimum human capital, economic stability and liberalized markets in order to benefit from long term impact of FDI on output is significant and positive for comparatively economically less advanced Philippines and Thailand, but negative in the more economically advanced Japan and Taiwan. Hence, the level of economic development may not be the main enabling factor in FDI growth nexus. Bende-Nabende et al. (2002) found that direct long-term impact of FDI on output.

FDI is a major contributor to investment in real estate and manufacturing sector, job creation, and foreign exchange stability in the host country (Choong, Yusop, & Soo, 2005). Therefore, countries must work on developing favourable conditions to encourage foreign direct investment. Globally, Foreign Direct Investment (FDI) has grown considerably in both the developed and developing countries in recent years which has contributed immensely to the growth and development in many countries around the world. For instance, FDI inflows into China's real estate market accounted for 10–15% of total FDI from the middle of 1990s to 2012 (He, Y., & Maskus, K. E. 2012).

In 2007, real estate ranked second only to India's computer software industry in attracting FDI (Economist Intelligence Unit, 2008). Similarly, over a period of 8 years from 2000 to 2008, real house prices rose by 75% in Mexico, 78% in Hungary, 26% in China, 40% in Poland and 45% in Tunisia (Cordero & Paus, 2008). Based on the above statistics, it was observed that increase in FDI in Real Estate sector contributed to the rise in house prices in those recipient countries because of the improvement in the quality of housing unit into classic modern units. This led economists and observers to suggest that real estate price appreciations in some emerging economies have been stimulated by the increased amount of FDI in Real Estate Investment (Cordero & Paus, 2008).

The African continent has been experiencing a drastic decline in FDI inflows from \$19 billion in 2001 to \$11 billion in 2012 in 23 countries out of the continent's 53 countries which adversely affected the growth of real estate sector in those respective countries (World Bank, 2014). The North and West African countries such as Angola, Algeria, Chad, Nigeria and Tunisia received more than half of the FDI inflows in



Africa in the year 2002- 2010 (UNCTAD WIR, 2003) which has largely contributed to the growth of the real estate sector through emergence of new infrastructural, telecommunication facilities and industries which have been set up to boost the economic welfare amongst those nations (Rusike, 2007). A FDI inflow to Africa in general has been declining due to perennial problems associated with underdeveloped nations such as political instability, war and institutional weakness (UNCTAD, 2009). On the other hand, inflows to Sub-Saharan Africa improved from \$29 billion in 2010 to \$37 billion in 2011 which largely has contributed to the rise in the number of new infrastructures such as housing units both for commercial and domestic purposes (Esso, 2010).

### **1.2.1 Foreign Direct Investments in Kenya**

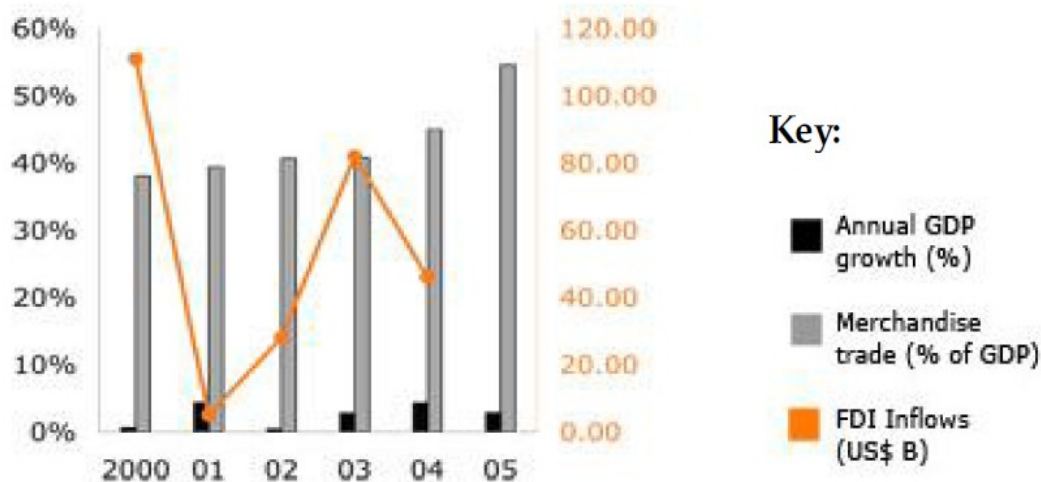
Kenya provides an impressive array of reasons to invest in its industries and is reported to have a well port system by the foreign investors. Kenya is regarded as the most developed country in East Africa and one of the top performing countries in Sub-Sahara Africa. In addition to this, Kenya's membership in common Market for Eastern & Southern Africa, with nearly 385Million people, thereby encouraging several international companies to increase substantially in the recent years. In 2003, top exports included horticulture (26.7%) and tea (24%), followed by apparel, coffee, iron and steel, soda ash, fish, and plastic.

The Kenyan parliament formulated Foreign Investment Protection Act and Investment Promotion Act of 2004 to ensure that there is a clear and well-articulated legal framework for FDI (Onyango& Kiriti-Nganga,2016).). The Investment Promotion Act of 2004 contains the Kenya's investment code which guides on the administrative and legal processes to create a more attractive and conducive climate for trade and investment (Amondi, 2016). In the 1970's Kenya was one of the most favoured

destinations for FDI in East Africa. FDI flows were at \$10 million in 1970's and it increased to \$80 million in 1980s (Kinuthia, 2010). However, poor governance, poor economic policies, high tax burden coupled with corruption and inefficient service delivery in the public sector has made Kenya experience low FDI flows from early 1980s to date. This economic backdrop caused Kenya to be left out of the global surge in FDI flows that started in the mid-1990s (UNCTAD, 2005). In 2018, Kenya received FDIs of 1.6 billion USD this was a rise from 1.2 billion in 2017. The total stock of FDI stood at USD 14.4 billion in 2018. In recent years the ICT sector has attracted the most FDI due to the arrival of the fibre optics in 2009-2010 (KNBS, 2014).

Studies over the years have established that FDI can either have a positive or a negative impact on the economy (Sylvester, 2005). A FDI inflow in Kenya has had a significant influence on the development of real estate sector (James, 2017). There has been an increased demand for housing in terms of residential and commercial property in Kenya (James, 2017) These increased demand for housing in Kenya has attracted foreign as well as local investors looking to capitalize on the increased demand (Amondi, 2016). With both investors seeking to profit from the increased demand, mortgage financing and investment in the real estate sector in Kenya has increased thereby affecting the real estate prices in the country (Salome, 2016).

Foreign Direct Investment enables a country to bring in knowledge and technology that are not steadily available to domestic investors and thus increases productivity growth throughout the economy. FDI may also bring in expertise that the country does not possess, and foreign investors may have access to global markets (De Gregorio, 2003).



**Figure 1. 1: FDI and GDP in Kenya, 2000-2005**

**Source: World development Report 2005, The World Bank**

Kenya's FDI is characterized by investment in foreign assets for example foreign currency, credits, benefits, or property undertaken by foreign nationals for the aim of producing goods and services which are to be sold overseas or in domestic markets. Kenya had about 114 foreign-affiliated firms by 2001 located in the economy according to United Nation Conference on Trade and Development (UNCTAD, 2005) majorly in form of multinational firms operating in the tertiary sector (trade, transport and telecommunications) with parent countries being majorly Britain, United States, Germany, South Africa, Netherlands, Switzerland and of late China and India (UNCTAD,2005).

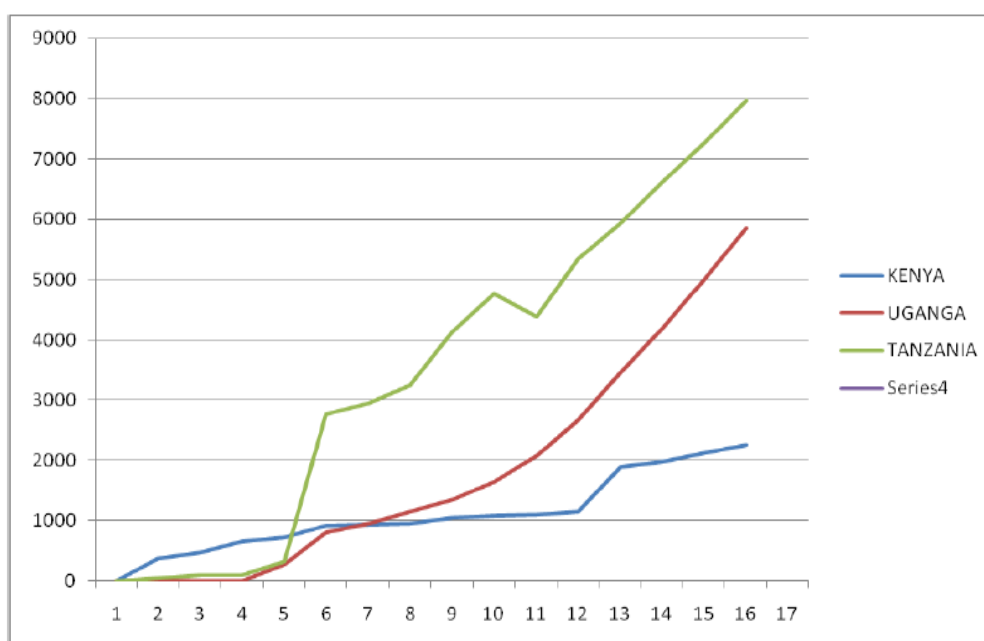
**Table 1. 1: FDI inward stock in East Africa. (US Dollars at current exchange rate in millions of shillings)**

YEAR/COUNTRY	KENYA	UGANDA	TANZANIA
1980	386.00	10.00	47.00
1985	476.00	8.00	91.00
1990	668.00	5.00	93.00
1995	732.00	276.00	325.00
2000	931.00	807.00	2,778.00
2001	937.00	962.00	2,960.00
2002	964.00	1,147.00	3,243.00
2003	1,064.00	1,349.00	4,139.00
2004	1,092.00	1,645.00	4,759.00
2005	1,113.00	2,074.00	4,390.00
2006	1,164.00	2,669.00	5,342.00
2007	1,893.00	3,461.00	5,942.00
2008	1,989.00	4,190.00	6,621.00
2009	2,129.00	5,006.00	7,266.00
2010	2,262.00	5,853.00	7,966.00

**Source: UNCTAD Data**

In Kenya, FDI is distributed in the manufacturing, service, tourism, and telecommunication sectors with 55 percent of the foreign firms concentrated in Nairobi while 23 percent in Mombasa. Kenya was one of the favourite destinations for FDI in East Africa in 1960s and 1970s (87 percent of foreign ownership of companies) with most investments in floriculture, horticulture, and manufacturing sectors. This can be attributed to the high development levels, good infrastructure, market size growth and openness to FDI that Kenya had.

Furthermore, according to UNCTAD's FDI performance index findings, Kenya has never ranked better than position 111 at any time since 1990. Perhaps this can be linked to factors like political instability, declining economic performance, slow rate of reforms, declining economic growth, corruption, rising cost of service, poor governance and policy environment that made investment unattractive to both foreign and domestic investors.



**Figure 1. 2: FDI inward stock trend in East Africa (1980 to 2010)**

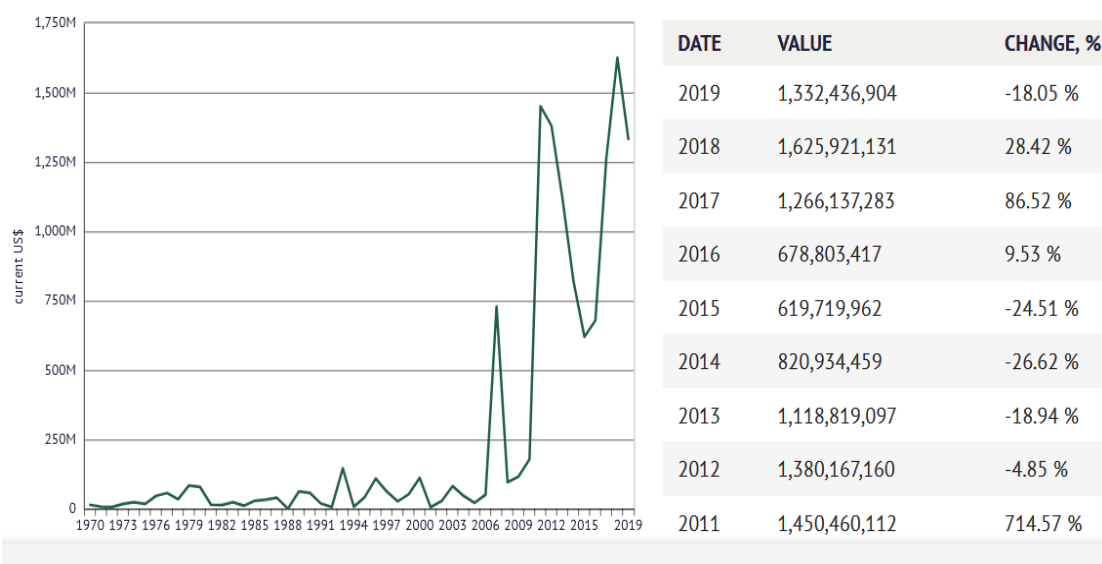
Source: UNCTAD Data

### 1.3 Statement of the Problem

The significance of Foreign direct investment to a country is to provide much needed capital for domestic investments, creates employment opportunities and help transfer of managerial skills and technology which contributes significantly economic development. Alguacil, Cuadros, and Orts (2011) argued that FDI plays a critical role as an economical and financial engine which facilitates rapid economic growth and development worldwide. It's through the FDI that investor companies provide the

much-needed capital for investment to the host country, improves the efficiency and skills of employees through technological and management skills transfer, helps create a more competitive business environment, enhances enterprise development, acts as a source of employment, improves the efficiency of resource use and ensure full employment of natural resources. FDI, in addition to its positive effect on the development it has minimized the trade barriers among the nations hence expansion of the market which has enabled many nations to record increase in sales number through international trade (Nyamwange, 2009).

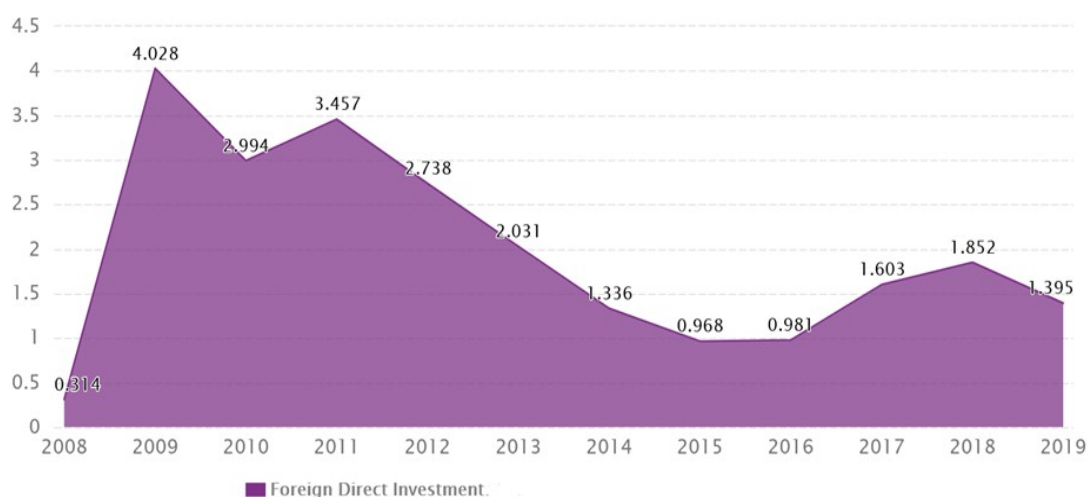
Despite Kenya trying to improve the reliability of electricity supply by modernizing its existing infrastructure, registering property, getting credit, protecting minority investors and with liberal policy frameworks becoming common place and losing some of their traditional power to attract FDI, Kenya is paying more attention to the measures that actively facilitate it. The net FDI inflows in Kenya has been declining and highly volatile despite friendly economic environment and improved policies implement to attract and retain FDI and accelerate her economic growth and development.



**Figure 1. 3: Fluctuations of Kenya FDI Inflows**

**Source: World Bank Data**

Even though Kenya is one of the largest recipients of FDI in Africa, FDI has remain relatively weak considering the size of its economy and level of development. The level of FDI in Kenya has been low and stagnant over the past couple of years and well below Kenya's potential. There has also been a worrying trend of foreign investors moving out of Kenya and gravitating to other countries. Recently, Kenya has lost its appeal to foreign investments making Tanzania and Uganda to surpass for example during the period 2005 to 2010 as shown in the figure 1.2, Kenya's FDI inflows averaged \$241.99 million in 2015, \$157.77 million in 2016 and during the year 2018, the FDI inflows to Kenya was \$ 164. 38 million (World Bank Data, 2018).



**Figure 1. 4: Foreign Direct Investment as % of GDP**

**Source: [www.ceicdata.com](http://www.ceicdata.com)**

Due to this FDI fluctuation, the study seeks to understand the key determinants of FDI to Kenya in terms of macroeconomic variables such as exchange rate, inflation, investor protection, level of technology, infrastructural development, and GDP. Understanding this will enable the policy makers to come up with suitable framework that will foster FDI inflows and in return will accelerate the economic growth.

## **1.4 General Objectives**

The general objective of the study was to determine the macroeconomic determinants of the FDI in Kenya.

### **1.4.1 Specific Objectives**

The specific objectives were:

1. To determine the effect of exchange rate on FDI inflows in Kenya.
2. To establish the effect of infrastructure development on FDI inflows to Kenya.
3. To test the effect of inflation on FDI inflows in Kenya.
4. To determine the effect of level of technology on FDI inflows in Kenya.
5. To analyse the effect of GDP on FDI inflows in Kenya.

## **1.5 Research Hypothesis**

$HO_1$ : There is no significant effect between Exchange rate and FDI inflows in Kenya.

$HO_2$ : There is no significant effect between infrastructural development and FDI inflows in Kenya.

$HO_3$ : There is no significant effect between inflation and FDI inflows in Kenya.

$HO_4$ : There is no significant effect between level of technology and FDI inflows in Kenya.

$HO_5$ : There is no significant effect between GDP and FDI inflows in Kenya.



## **1.6 Significance of the Study**

This study is significant in the sense that understating the key factors that has lead foreign direct investments to fluctuate or has brought about the decreasing trend of FDI inflows over the years and has made foreign investor shift focus on Kenya's bordering neighbours such as Tanzania and Uganda yet Kenya is the leading economy in East and Central Africa. It should be noted that FDI inflows to Kenya is very crucial because it serves as a source of capital and given that foreign aid has been dwindling over the years. This study is important in that, FDI stimulates domestic investment, promotes economic growth, and creates employment opportunities. This study goes a long way in informing government supply-side policies such as government subsidies, tax rebates, recommended to attract and channel the FDI to more productive and comparative advantaged manufactured export sectors so as to augment the productive and export supply capacity for domestic producers and improve the level of efficiency (Reuben, scholastic, Bange, 2019).

## **1.7 Scope of the study**

The study was conducted in Kenya in determining the factor influencing FDI inflows. The study limits itself on macroeconomic determinants of Foreign Direct Investment inflows in Kenya for a period of 41 years from 1980-2020. The data was collected on yearly basis from World Bank. This is because foreign direct investment to Kenya has been fluctuating over and over and this has resulted foreign investors to shift focus on Kenya's neighbouring countries, Tanzania, and Uganda. Therefore, this study gives an insight to what really affects the FDI inflows to Kenya. The 41 years is good enough to cater for any structural changes that would occur on the FDI. To estimate the study parameters, GMM model was employed. The research design is explanatory design as the researcher seeks to explain the link between macroeconomic

determinants of FDI inflow. These macroeconomic variables are inflation, exchange rate, level of technology, infrastructural development and GDP growth.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Overview**

This chapter covers literature review of existing scholarly work on the relationship between macroeconomic determinants and Foreign Direct Investment inflows in Kenya. It outlines a detailed of the concepts, theoretical and empirical review of the existing works as well as the conceptual framework.

#### **2.2 Concept of Foreign Direct Investment Inflows**

Foreign direct investment (FDI) is an investment made by a firm or individual in one country into business interests located in another country. Generally, FDI takes place when an investor establishes foreign business operations or acquires foreign business assets in a foreign company. Economists have agreed that FDI has emerged as most significant source of external resource to the developing countries and a relevant element of capital development (Kumar and Pardhan, 2002).

The magnitude of FDI reflects the confidence of global investment and plays a vital role in increasing economic growth and creates employment opportunities in the recipient country via technological spill overs (Jenkins 2006). Falki (2009) argued that FDI catalyses for economic growth in developing nations. Hussain *et al.*, (2010) analysed the role of the public and private investment and the impact of the political and macroeconomic uncertainty of growth in Pakistan. Public and private investment showed an encouraging impact on individual economic growth.

Foreign direct investment has a greater importance to improve the economic growth that depends on its exogenous factors. According to Farkas (2012), FDI positively impacts the country's GDP and its impact depends upon the absorptive capacity of

the host country and financial markets. Johnson (2006) explained that FDI inflows increases the economic growth of the country not just for developing nations but also for developed countries as well.

### **2.3 Concept of Macroeconomic Variables**

The concept of macroeconomic is wide and is usually correlated or linked with certain ideologies such as unemployment, inflation, foreign direct investment and exchange rate. Researchers have concluded that macroeconomic variables are an indicator of economic stability of a country, and it dates back to the First World War when macroeconomic variables were used by countries to gauge their opponents (Danmola, 2013).

According to Brüning and Thuilliez, (2019) macro-economic variable is classified into three categories, and which are linked to the economy. The first category are procyclic variables which tend to increase spending during expansions in contravention of rational stabilization policy (Lim, 2020). Procyclic variable include variables such as gross domestic product. The second category of macroeconomic variables are the counter cyclic macro-economic variable. These are variables that tends to decrease when the economy is growing and rise when the economy is worsening (Rehermann, & Pablo-Romero, 2018). Those in the third category are referred to as acyclic macroeconomic determinants. They have no correlation with the condition economy (Łecka, Myszczyzyn, Gołąb, Będzik & Suproń, 2020).

### **2.4 Theoretical Perspectives**

The study was guided by three theories that help in linking the independent variable with the dependent variable and shedding more light on the topic under investigation.

#### **2.4.1 Neoclassical Theory of investment**

The Neoclassical theory of investment was proposed by Cockcroft and Riddell (1991) the economist who stated that the investment inflows into a country is determined by the factors including macroeconomic policies and taxation and how these policies and factors influences the rate of return that is expected in a firm (Kimotho 2010). The theory argues that the inflows of Foreign Direct Investment increase the capital growth in an economy both directly and indirectly through research and development, technology transfers and introduction of new forms of human capital, growth in industries and the real estate investments.

When a country has in place suitable policies such as tax incentives, ease of obtaining licenses and starting businesses and improved infrastructure, Multi National Enterprises will be drawn to these countries leading to increased investment and employment in the host country (Cadman, 2015) .When employment rates of a country increase, the income per capita of the host country increases which means that more people will seek better living standards through better housing and other necessary social facilities such as better education ,recreation and health centres (Casson, & da Silva Lopes 2013) These needs translates in the long run to increased investments in the real estate sector (Amondi 2016).

Taking the example of Kenya, through the announcement of corporate tax deduction of 20 percent in 2013 from the previous 30 per cent in previous years for the developers who developed more than 1000 houses in a year (GoK, 2014), foreign real estate developers were drawn into the country in attempt to capitalize on the tax incentives and promising real estate sector which led to a boom in the construction and real estate sector. According to Real Estate Report by Cytonn Investment (2013)

of the third quarter of 2013 (Wanjiru 2019)., the highest growth in different sectors of the economy was reported by construction and Real sector at 14.1% ahead of agriculture which reported 7.1% and financial service which reported 10.1%. Additionally, as these firms expand their operations into the host country, they bring along new ways of doing business like the income real estate investment by Stanlib in the case of Kenya which local firms such as NSSF are considering imitating following its success (Amondi 2016)).Kenya has an open and active relationship with their external foreign investors and therefore using concepts of Neo classical theory of investment, the study will bring out the role that Foreign Direct Investment Inflows is playing in influencing the rates of real estate development in Kenya.

#### **2.4.2 The Purchasing Power parity (PPP) theory**

This theory was proposed by Cassel in 1918. This period was just after the World War 1 during the debate of international policy which was dealing with suitable level for nominal exchange rates among the major economies that were industrialized after the large-scale inflations during and after the war (Taylor, & Taylor,2004). The Purchasing Power Parity theory argues that the nominal exchange rate between currencies of two countries should be equivalent to the ratio of aggregate price levels between the two countries, therefore meaning that a unit of currency of one country will have the similar purchasing power in a foreign nation. The theory is measuring the purchasing power of one currency in terms of another after considering their exchange rate which is determined by the parity between the purchasing powers of the currencies. The theory is established on the law of one price which demands that there being no transportation cost or differential tax in any two markets, identical goods should sell for same price (Suranovic, 1999).

The level of prices in the two markets should have to be linked through the alteration standard and hereafter the beginning of association between exchange rate and inflation rate differences. In that, when the development rate discrepancy between two monetary standards fluctuates, the exchange scale adjusts to associate to the relative procurement energy of the monetary standards. In the event that the hypothesis holds, at that point buy equality exists between the two monetary standards (Madura, 2007).

The major issue is that of knowing how exchange rate can be able adjust. This is because economies under the fixed exchange rate regime want to know the possible exchange rate equilibrium while countries with exchange rate that is determined by market forces of supply and demand would want to understand what level and fluctuation in real together with nominal exchange rate that they should be expecting. In other words, the question of whether exchange rates is adjusting towards a level recognized by purchasing power parity is helpful in determining the degree in which the international macroeconomic structure is equilibrating itself.

The suggestion of this theory might be true for the reason that international goods arbitrage is linked to the law of One Price, which argues that the prices of goods that are traded internationally should be common anywhere in the world the moment that price is expressed in a single currency, because individuals could possibly make riskless profits through transporting the commodities from places where the price is very low to places of high prices. The theory relates to this study since it explains the exchange rate concept which is one of the predicting variables in this study.

#### **2.4.3 The Accelerator Theory of Investment**

The accelerator theory stipulates that capital investment outlay is a function of output. For example, an increase in national income, as measured by (GDP), would cause a

proportional increase in capital investment spending. (Akhilesh Ganti, 2009). The accelerator theory postulates that investment expenditure increases when either demand or income increases. The theory also suggests that where there is excess demand, companies can either decrease demand by raising prices or increase investment to meet the level of demand. The accelerator theory suggests that companies choose to increase production, thereby increasing profits, to meet their fixed capital to output ratio.

The accelerator theory was conceived by Thomas Nixon Carver and Albert Aftalion, among others, before Keynesian economics, but it came into public knowledge as the Keynesian theory began to dominate the field of economics in the 20th century. The accelerator theory might be used to determine if introducing tax cuts to generate more disposable income for consumers who would then demand more products would be preferable to tax cuts for businesses, which could use the additional capital for expansion and growth.

## **2.5 Macroeconomic Determinants and Foreign Direct Investments Inflows**

This section outlines some of the literature reviewed regarding the relationship between the selected macroeconomic determinants on Foreign Direct Investment inflows in Kenya.

### **2.5.1 Exchange Rate on Foreign Direct Investment Inflows**

Musyoka, & Ocharo, (2018) established the effect of real interest rates, exchange rate, inflation, and competitiveness on Foreign Direct Investment in Kenya. The study utilized yearly time series data for the period 1970-2016. The data for the study was sourced from the World Bank Indicators and Kenya National Bureau of Statistics annual reports. The variables under the investigation included the following: real



interest rates, exchange rates, inflation rate, competitiveness/ease of doing business and Foreign Direct Investment. In order to determine the effect of the variables of concern on foreign direct investment in Kenya, the study adopted ordinary least square regression method. The study findings revealed that real interest rates and exchange rates have both negative and significant influence on Foreign Direct Investment inflows into Kenya.

Additionally, the study found that competitiveness has a positive and significant influence on foreign direct investment inflows into Kenya. Nevertheless, the study found that inflation to be insignificant in influencing the Foreign Direct Investment in Kenya. Vincent, Salubi, & Timothy (2017) evaluated the effect of exchange rate on foreign direct investment in Nigeria. Nonetheless, Openness of the Economy and Balance of Payments were included in the study as complementary variables for the purposes of making comparison. The study utilized time series data that were collected from 1980 to 2014. The data were obtained from the Central Bank of Nigeria Statistical Bulletin.

The conventional stationarity test of Augmented Dickey Fuller was conducted. Ordinary Least Squares regression method was adopted during data analysis. The study findings established that Exchange Rate, Openness of the Economy, and Balance of Payments have positive and statistically significant effect on Foreign Direct Investment inflows in Nigeria. Even though, entirely the variables under the investigation were statistically significant, the elasticities showed that Exchange Rate with the highest elasticity had a lot of impact on Foreign Direct Investment followed closely by Openness of the Economy and Balance of Payments.

Otieno & Njuguna (2016) investigated the impact of major economic determinants which included inflation, real interest rate, real exchange rate, and development expenditure on inflows of Foreign Direct Investment in Kenya. The study used the time series data that were collected since 2002 to 2013. The study adopted Ordinary Least squares and correlation analysis techniques. After analysis, the study established that there is a positive and significant relationship between development expenditure and the inflow of Foreign Direct Investment and a negative relationship between the real interest rate, inflation, and the real exchange rate on Foreign Direct Investment inflows in Kenya.

Munene, J (2016) aimed at establishing the relationship between exchange rate and foreign investor capital flows in Kenya. The specific objectives of the study included: to establish the connection between exchange rate and foreign investor capital flows; to evaluate the relationship between commercial tax rate and foreign investor capital flows and lastly to analyze the affiliation between economic growth rate and foreign investor capital flows. The study employed a descriptive research design together with time series data that were collected since 2006 to 2015. The study adopted the descriptive, correlation and regression analysis techniques. From the analysis, the study results indicated that all variables under the investigation were statistically significant. The correlation between exchange rate and foreign investor capital flows was found to be strongly positive. The study also recorded a positive and strong relationship between economic growth rate and foreign investor capital flows.

Nonetheless, tax rate and foreign investor capital flows were found to have a negative relationship in Kenya. Bosire, (2018) did a study on the effects of major economic factors of Economic growth, Exchange rate, Interest rate and Inflation on the inflows

of Foreign Direct Investment in twelve countries in Eastern Africa. The study used the panel data that were collected from the year 2004 to 2016 and the Generalized Least Squares econometric method of analysis. After the analysis, the study found out that economic growth, inflation and exchange rate have positive but not significant effect on the flow of Foreign Direct Investment into Eastern Africa region. Interest rate on the other hand recorded a negative but insignificant relationship with Foreign Direct inflows into Countries of Eastern Africa.

Kwoba, & Kibati, (2016) conducted a study to discover the impact of exchange rate, Gross Domestic Product and inflation on Foreign Direct Investment in Kenya. In order to answer the objectives, the study utilized primary data that were collected from a sample of 271 people since the year 2005 to 2014. The dependent variable for the study was the foreign direct investment which was measured as a percentage of Gross Domestic Product. The independent variables of the study included: exchange rate, Gross Domestic Product and the rate of inflation. Ordinary least squares regression method was used during data analysis in order to evaluate the connection between exchange rate, Gross Domestic Product, inflation rate and FDI inflows. From the analysis, the study established that Exchange rate, Gross Domestic Product and Inflation have a negative but insignificant effect on the inflows Foreign Direct Investment in Kenya.

### **2.5.2 Inflation and Foreign Direct Investment Inflows**

Eric, D., Samuel, M., & Charles, L. (2019) conducted a study to evaluate the socio-economic determinants of foreign direct investment inflows in Kenya. The specific of the study was to analyze the effect of economic growth, human capita development, and cost of borrowing and inflation rate on foreign direct investment inflows in Kenya. This study used a reflective longitudinal research technique. The study

utilized secondary panel data that were collected in 1980 to 2015 for all variables under the investigation. The utilized data was obtained from Central Bank of Kenya, Kenya National Bureau of Statistics, and the World Bank and the International Monetary Fund. The study used both descriptive and inferential statistics during the analysis. The findings recorded that economic growth, human capital development, cost of borrowing and inflation rate are statistically insignificant on the flow of Foreign Direct Investment. However, inflation was statistically significant.

Ogono, G. M., Obange, N., & Odhiambo, S. A. (2017) investigated the major determining factors of Foreign Direct Investment inflows in Kenya. The study was guided by the dynamic macroeconomic theory and the correlational research technique. The study used time series data that were collected from 1970 to 2015. The utilized data was obtained World Development Indicators data bank. The study outcomes showed that annual growth rate of Gross Domestic Product, inflation rates and external debt as a proportion of Gross Domestic Product as significant determinants of Foreign Direct Investment inflows in Kenya.

Shaikh, Shaikh, & Mirza, (2019) found out the influence of Gross Domestic Product growth rate and rate of inflation on the inflow of Foreign Direct Investment in Pakistan. The study used time series data which was collected from 1970 to 2015 and estimated the Autoregressive Distributed lags method of analysis. From the analysis, the study found out that the variables under the investigation that is Gross Domestic Product growth rate and Inflation rate as significant determinants on the inflow of Foreign Direct Investment in Pakistan at the time of evaluation. Basing on the findings, the study suggested that the government of Pakistan requires to arrange its monetary policy to be more effective in order to guarantee a stable and increasing economic growth in the country.

Oyinlola, Adeniyi, Raheem, & Ajide, (2017) assessed the influence of inflation fluctuation on the inflows of foreign direct investment to selected ECOWAS countries. The study used the Generalized Autoregressive Conditional Heteroskedasticity to measure the volatility of inflation which found out that there has been a longstanding oscillation of inflation in these selected countries. The study used the ordinary least squares and the Generalized Method of Moments and confirm that inflation variability is positive and statistically significant in encouraging the inflows of Foreign Direct Investment. In all, estimates from both OLS and SYS-GMM suggested that inflation variability appeared to encourage FDI inflows.

Ambaw, & Sim, (2018). Investigated the question of which monetary policy regime is more effective for attracting the inflows of Foreign Direct Investment into developing economies. Is it inflation targeting or the fixed exchange rate? The study employed the propensity score matching together with the difference-in-differences estimator during analysis which found out that applying an inflation targeting regime would be more effective than embracing a fixed exchange rate, and conversely, in attracting the inflows of Foreign Direct Investment.

Babajide, & Lawal, (2016) evaluated the relationship between Foreign Direct Investment and some selected macroeconomic variables both at the long and short run equilibrium in Nigeria. The theory that guided the study was the Macroeconomic theory of Foreign Direct Investment inflows. The study utilized Autoregressive Distributed Lag measurement methods to examine if the selected macroeconomic variables have statistical significance impact on Foreign Direct Investment. The specific objectives of the study included: what macroeconomic variables require to be handled with the intention of promoting the inflows of Foreign Direct Investment to the nation's economy? Which policy suggestion should be embraced? The study

findings showed policies attempting to expand trade, increase government expenditure, manipulate the exchange rate system, lower inflation and interest rates are necessary in attracting inflows of Foreign Direct Investments.

Okafor, Piesse, & Webster, (2017) conducted an exploratory study of the determinants of foreign direct investment into the regions that receive least Foreign Direct Investment. The study employed panel data for twenty sub-Saharan Africa and eleven Middle East and North Africa states for a period spanning from 2000 to 2012. The Hausman test results rejected the null hypothesis, and that fixed effect model was appropriate. The outcomes of the fixed effects estimations suggested that inflows of Foreign Direct Investments into the regions under the investigation are impacted by Gross Domestic Product per capita, infrastructure development, trade openness, and control of corruption. On the other hand, inflation was found to be a negative determinant of inflows of Foreign Direct Investments, whereas rents obtained from natural resources do not significantly influence Foreign Direct Investments. In addition, the results revealed that marginal benefits arising from any upsurge in the quantity of Foreign Direct Investment determinants will be fewer for sub-Saharan Africa nations.

Ibhagui, (2019) investigated the influence of inflation on Foreign Direct Investment in seventy-four countries grouped into industrialized and non-industrialized nations. Differing to preceding studies, the study showed that the connection between inflation and Foreign Direct Investment is nonlinear, with verge effects in industrialized and non-industrialized nations. The study found out that the inflation threshold is approximately five times greater for non-industrialized countries than industrialized economies. Inflation tends to lower Foreign Direct Investment inflows in industrialized countries only when it is above its threshold, while its influence on

Foreign Direct Investment is negative in non-industrialized countries even as soon as its threshold is not surpassed.

### **2.5.3 Infrastructure Development and Foreign Direct Investment Inflows**

Zhumakankyzy, & Mintayevich, (2017) examined the possible factors that determines foreign direct investment inflows into the region of Eurasian Economic Union, along with motivations for investment into other neighbouring economies. The study tested a hypothesis on country specific foreign direct investment determining factor for the Eurasian Economic Union region in the first model. The study findings of fixed effects due to Hausman estimation showed that gross domestic product, infrastructure development and enrolment of secondary education are positive and statistically significant factors that determines the inflows of foreign direct investment into the region. On the other hand, the influence of Customs Union on foreign direct investment was negative and statistically significantly in impacting on the foreign direct investment inflows to the region under the investigation.

Kumari, & Sharma, (2017) sought to identify the major determining factors of foreign direct investment inflows in developing countries. The study utilized the unbalanced panel data set from 20 developing economies from Asia since 1990 to 2012. The study used the following independent variables: market size, trade openness, infrastructure, inflation, interest rate, research and development and human capital. The study tried to discover the best fit model from the two models considered (fixed effect model and random effect model) with the help of Hausman test. After rejecting the null hypothesis from the Hausman test results, the fixed effect estimation indicated that market size, trade openness, interest rate and human capital have significant coefficients in relation to inflow of Foreign Direct Investments for the

panel of developing countries under investigation. The results revealed that market size was the most significant determinant of Foreign Direct Inflows.

#### **2.5.4 Level of Technology and Foreign Direct Investment Inflows**

Baricako, & Kedir, (2020) conducted investigating the way in which the policies of privatization and investment in Africa can function as a source of foreign direct investment. The present policies concentrating on diversification and mobilization of domestic resources requires to be accompanied with resources from outside the country such as Foreign Direct Investment because the latter is a major route for technological spillover and a key source of development finance. The study used panel data in discussing the present conditions and emergence of development finance such as inward foreign direct investment within the framework of privatization and investment policies in Africa. The study finally emphasized the importance of Foreign Direct Investment for provision of job opportunities and the transfer of technological and management expertise.

Gachino (2009) evaluated the relevance of industrial policy and institutions industrial development in Kenya. The study also examined Foreign Direct Investment concentrating on positive externalities, competency development and performance. The study discovered that Foreign Direct Investment is a positive determinant in industrial development through the positive externalities. However, the study proposed that role of Foreign Direct Investment in industrialization can be improved by encouraging a strong science, technology and innovation culture.

Mahirwe & Long, (2019) attempted to formulate a framework whereby any country can encourage transformations in various structural sectors and specialization in the economy and guarantee a continuous economic development irrespective of their



natural resources. For this reason, the study was intended to give some facts concerning the interaction between Foreign Direct Investment externalities and the advantages of Location specific of the hosting nation. The study found out that various structural transformation positively influences the inflows of Foreign Direct Investment in Kenya.

Ly, Esperança, & Davcik, (2018) investigated the influence of linguistic and technological relationships between countries on foreign direct investment, by use of an extended gravity model. The model included technological commonality, as measured by the aggregate production of intellectual property, at the country level. The study used a sample of 71,309 pairs of Foreign Direct Investment relationships, since 2000 to 2012. The results of the study revealed that language is positively associated with a high level of Foreign Direct Investment. Technical variances do inhibit the flow of Foreign Direct Investment between countries, and the flow of information is essential for large flows of Foreign Direct Investment. Information flow reduces the negative influence of distance.

#### **2.5.5 Gross Domestic Product and Foreign Direct Investment Inflows**

Kinuthia, & Murshed, (2015) evaluated comparatively the determinants of foreign direct investment in Kenya and Malaysia together with its influence on economic growth with the idea of giving policy guidelines to the concern parties. Recently, Kenya has embarked on using the method that Malaysia adapted in attracting the foreign investors. The study used the time series data which was collected since the year 1960 to 2009. The study also used the vector autoregressive model during data analysis. The study findings confirm that Foreign Direct Investment in Malaysia is beneficial in growing the economy when compared with Kenya. The major reason

was that the difference in stability of various macroeconomic sectors, better infrastructure development and good policies for trade in Malaysia than in Kenya.

Daniel, (2014) investigated the major drivers of real Gross Domestic Product growth in Kenya together with those that are driving the foreign direct investment in Kenya. Globally, the role of Foreign Direct Investment is undisputed. The advantages that come with it are several. The provision of foreign capital, transfer of technology, making of local firms to be competitive and provision of employment are among the benefits. From analysis, the study found out that Foreign Direct Investments in Kenya is Market-seeking which requires a progressing economy and a nation that is stable politically in order to attract foreign investors.

Nyamwange, (2009) identified the major factors influencing decisions of foreign direct investors in Kenya and also explored the empirical connection between Foreign Direct Investment and economic growth in Kenya. After the analysis, the study discovered that the major determining factors of Foreign Direct Investment in Kenya are market size which was used as a proxy for Gross Domestic Product, stability of macroeconomic policies and an up-to-date level of human capital that is acceptable by investors. The study also found that human capital was an insignificant determinant on economic growth suggesting that Kenya is a country with less skilled workforce.

Omanwa, S. M. (2013) investigated the factors that may determine the inflows of Foreign Direct Investment moreso into the Kenyan economy. After going through several empirical studies on the factors influencing the inflows of Foreign Direct Investment into the country, the study evaluated the main and very significant factors from the ones that had been sited before in the literature that may impact the inflows of Foreign Direct Investment into Kenya. The study employed time series data that

were collected since 1996 to 2009. The study used the authors Ordinary Least Squares regression model in testing the variables which included market size(GDP), openness, inflation, labor, infrastructure, corruption and political instability which play a big role in influencing the inflows of Foreign Direct Investment into the country. The study findings of the study revealed that results in most significant factors in attracting FDI inflows into Kenya were the size of the market and the level of openness of the economy.

Wekesa, Wawire, & Kosimbei, (2016) sought to determine the effects of transport, energy, communication and water and waste infrastructure development on the inflows of Foreign Direct Investment in Kenya. The study employed the yearly secondary data which were obtained from Central Bank of Kenya (CBK), World Bank and the United Nations Conference on Trade and Development. The study used multiple regression model to analyse the data. The results of the study revealed that improved transport infrastructure, communication infrastructure, water and waste infrastructure, exchange rate, economic growth and trade openness are statistically significant factors determining the inflow of Foreign Direct Investment into Kenya. Henceforth, for Kenya to attract more foreign investors, it should ensure that there is a continuous infrastructural development because quality infrastructure provide a good environment for foreign investors for them to operate successfully.

John Gachunga, (2019) sought to establish the extent to which inflows of Foreign Direct Investments in the infrastructure sector, the manufacturing sector and the agricultural sector influence the growth of Kenyan economy. The outcome of the study revealed that Foreign Direct Investment in the infrastructure sector has a statistically significant and positive influence on economic growth whereas the manufacturing and agriculture sectors were found to have a positive but statistically

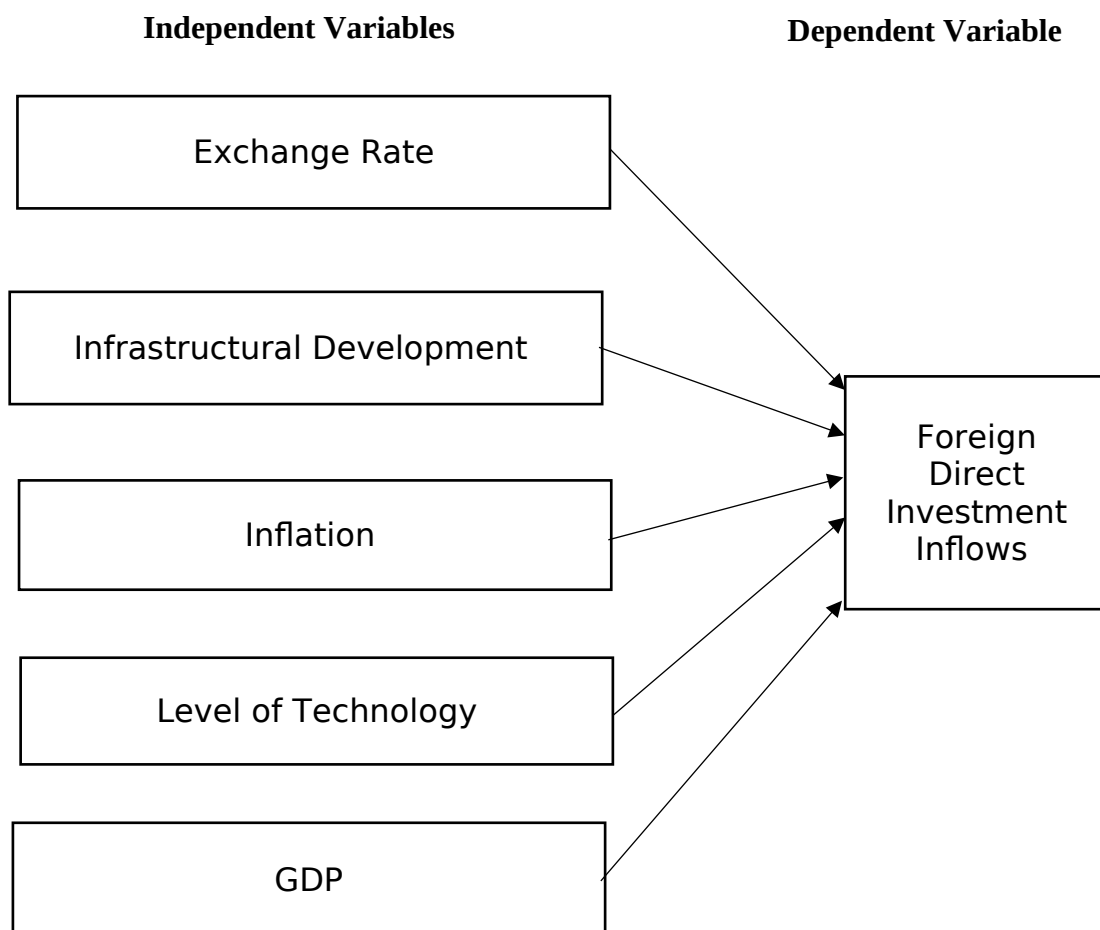
insignificant. However, when compared with the manufacturing sector foreign direct investment inflows to the agricultural sector are very small giving enough reason for little influence.

Okoro, Nzotta, & Alajekwu, (2019) investigated the effect of international capital inflows on economic growth of Nigeria. The study used time series data which was collected since 1986 to 2016. The study utilized four core channels of international capital inflows which included foreign direct investment, official development assistance, personal remittances, and external debt stock into Nigeria as the explanatory variables and Gross Domestic Product growth rate as the dependent variable. The study utilized Johansen co-integration and Ordinary Least Square. During data analysis. The findings of the study revealed that international capital inflows have long run relationship with economic growth of Nigeria. The results from the OLS found out that Foreign Direct Investment and remittances are significant and positive determinants of economic growth in Nigeria.

Murageh, and Wepukhulu, (2019) investigated the effect of foreign direct investment on economic growth in Kenya. The study utilized explanatory research design. Time series annual data from 1971 to 2017. The sources of the data were as follows: Kenya National Bureau of Statistics, the World Bank and the Central Bank of Kenya. The study conducted correlation analysis test in order to ascertain whether there is presence of any relationship between the dependent and independent variable. The regression results of the study found that foreign direct investment has a positive and significant influence on economic growth in Kenya.

## 2.6 Conceptual Framework

This is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. Strong conceptual frameworks capture something real and do this in a way that is easy to remember and apply. According to Internationalization theory by Buckley and Casson (1976), the decision by a firm to expand abroad is dependent on its cost benefit analysis of its host country and home country. The conceptual model developed below portrayed this expected relationship between the study variables. The factors characterized here are Foreign Direct Investment (FDI) as dependent variable and the independent variables are exchange rate, infrastructural development, inflation level of technology and GDP.



**Figure 2. 1: Conceptual Framework**

**Source: Author's Own Conceptualization**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Overview**

The chapter outlines the overall research methodology to be used in estimating parameters of the study. This entails the design, study population, data type and sources, sample and sampling techniques, the model and ethical consideration. In this case, there are several discussions including the research design,

#### **3.2 Research Design**

According to Polit (2017), A research design of a study defines the study type, research problem, methods of data collection and statistical analysis. This study employed time series analytical technique which is an explanatory research design. This research design provides empirical evidence suggesting two or more variables are related and the direction of relationship (Burns& Groove, 2013). Similarly, the analytical research design is used to gain a better understanding and a more insightful interpretation of the results. The data was collected on yearly basis from World Bank spanning from the year 1980-2020. This is because foreign direct investment to Kenya has been fluctuating over and over and this has resulted foreign investors to shift focus on Kenya's neighbouring countries, Tanzania, and Uganda. Therefore, this study gives an insight to what really affects the FDI inflows to Kenya.

### 3.3 Study Area

The study was conducted in Kenya. It is located approximately between latitudes 5°N and 4.5°S, and Longitude 34°E and 42°E. Kenya has a total area of 582646Km<sup>2</sup> of which 2.3% of the total area is occupied by water surface and it is the largest economy in East Africa. The main reason why the study chose this study area is that Kenya's economy is one of the largest and fastest growing economies in the East African region and geographically stands at a very strategic location in the region. Kenya has approximated of 47.5 million according to 2019 Kenya Population and Housing Census (KPHC). It serves five landlocked countries that are relatively resource-rich (Ethiopia, South Sudan, Uganda, Rwanda, and Burundi) hence the need to investigate how its foreign direct investments has been affected by chosen independent variables.

### 3.4 Model Specification

The study estimated its parameters using Generalized Methods of Moments (GMM). GMM was formalized by Hansen 1982. It is the most widely used method of estimation for models in econometrics and finance and it is the workhorse of modern econometrics (Cameron and Trivedi, 2005, 2010; Green, 2012; Ruud, 2000; Hayashi, 2000). GMM model differ with Maximum Likelihood Estimation in the sense that it does not require complete knowledge of the distribution of the data. GMM only require specified moments derived from an underlying model in GMM estimation (Hall,2005; Woodridge,2010).

Consider the regression model

$$y_t = z_t' \delta_0 + \varepsilon_t, t = 1, \dots, n \dots \dots \dots 3.1$$

Where,  $z_t'$  is an  $L \times 1$  vector of independent variables,  $\delta_0$  is a vector of unknown coefficients and  $\varepsilon_t$  is a random error term. The model in equation 3.1 allows for the possibility that some or all the elements of  $z_t$  may be correlated with the  $\varepsilon_t$  (error term) for example  $E[z_{tk}\varepsilon_t] \neq 0$  for some  $k$ . If  $E[z_{tk}\varepsilon_t] \neq 0$  then  $z_{tk}$  is called an endogenous variable.

It is well known that if  $z_t$  contains endogenous variables the Least Squares Estimates (LSE) of  $\delta_0$  in equation 3.1 is biased and inconsistent. In the model equation 3.1, it is assumed that there exist a  $K \times 1$  vector of instrumental variables  $x_t$  which may contain some or all the elements of  $z_t$  (Hall,2005).

Let define  $w_t$  to represent the vector of unique and non-constant elements of  $\{y_t, z_t, x_t\}$ . It is assumed that  $\{w_t\}$  is a stationary and ergodic stochastic process. The instrumental variables  $x_t$  satisfy the set of  $K$  orthogonal conditions

$$E[g_t(w_t, \delta_0)] = E[w_t \varepsilon_t] = E[w_t (y_t - z_t' \delta_0)] = 0 \dots \dots \dots 3.2$$

Where,  $g_t(w_t, \delta_0) = w_t \varepsilon_t = w_t (y_t - z_t' \delta_0)$ . Expanding equation 3.2 gives the relation

$$\Sigma_{xy} = \Sigma_{xz} \delta_0 \dots \dots \dots 3.3$$

Where,  $\Sigma_{xy} = E[x_t y_t]$  and  $\Sigma_{xz} = E[x_t z_t']$  for identification of  $\delta_0$ , it is required that the  $K \times L$  matrix  $E[x_t z_t'] = \Sigma_{xz}$  be of full rank.

This rank condition ensures that  $\delta_0$  is unique solution to equation 3.3. If  $K = L$  then  $\Sigma_{xz}$  is invertible and  $\delta_0$  may be determined using

$$\delta_0 = \Sigma_{xz}^{-1} \Sigma_{xy} \dots \dots \dots 3.4$$



Which is like familiar formula  $\hat{\beta} = (X'X)^{-1}X'Y$  written in summation notation.

The Generalized Method of Moments (GMM) estimator of  $\delta_0$  in equation 3.1 is constructed by exploiting the orthogonality condition of equation 3.2. The idea is to create a set of estimating equations for  $\delta$  by making sample moments match the population moments defined by equation 3.2. the sample moments based on equation 3.2 for an arbitrary value of  $\delta$  are,

$$g_n(\delta) = \frac{1}{n} \sum_{t=1}^n g(w_t, \delta) = \frac{1}{n} \sum_{t=1}^n x_t (y_t - z_t' \delta) \dots \dots \dots 3.5$$

$$i \begin{pmatrix} \frac{1}{n} \sum_{t=1}^n x_{1t} (y_t - z_t' \delta) \\ \vdots \\ \frac{1}{n} \sum_{t=1}^n x_{kt} (y_t - z_t' \delta) \end{pmatrix} \dots \dots \dots 3.6$$

These moment conditions are a set of  $K$  linear equations in  $L$  unknowns. Equating these sample moments to the population moment  $E[x_t \varepsilon_t] = 0$ , gives the estimating equations

$$S_{xy} - S_{xz} \delta = 0 \dots \dots \dots 3.7$$

Where,  $S_{xy} = \frac{1}{n} \sum_{t=1}^n x_t y_t$  and  $S_{xz} = \frac{1}{n} \sum_{t=1}^n x_t z_t'$  are the sample moments. If  $K = L$  ( $\delta_0$  is just

identified) and  $S_{xz}$  is invertible then the GMM estimator of  $\delta$  is

$$\hat{\delta} = S_{xz}^{-1} S_{xy} \dots \dots \dots 3.8$$

Which is also known as the indirect least square estimator.

### **3.5 Data Collection Methods**

Data was exclusively collected from secondary sources. The study used time series data from Kenya National Bureau of Statistics (KNBS) publications as well as economic surveys and World Bank website. FDI which is a net flow of investment measured as a percentage of GDP was obtained from UNCTAD and World Bank data bases for the period 1980-2029 on yearly basis. Other explanatory variables were obtained from World Bank websites.

### **3.6 Analytical Techniques**

The process to which a researcher summarizes the raw data into a meaningful interpretation is called analytical technique according to definition by Cox and Hassard (2010). The study data which is quantitative in nature and was analysed using descriptive as well as inferential statistics. The study described the data using measures of central tendency. According to (Cohen, 2014), descriptive statistics is important in analysis because it allows the presentation of raw data in a meaningful manner. It gives the general overview of the sample and to simplify large data set in sensible manner. Descriptive statistics included frequency distributions, mean, standard deviation and percentages. Inferential statistics includes the estimation of econometric equation in this case GMM model. The inferential statistics were used to evaluate the determinants FDI inflows in relation to exchange rate, infrastructural development, Inflation, level of technology and GDP. STATA software was used to analyse the data. STATA is chosen because it is command driven and easy to understand and it has the ability to analyse econometric time series data.

### **3.7 Pre-Estimation Test**

Before estimation of econometric model, there are several tests required to be checked. One of them is the stationary property of the data and assumptions of multivariate regression such as normality, heteroskedasticity, auto correlation and multicollinearity.

#### **3.7.1 Stationarity Test**

As discussed earlier that GMM model estimation requires vector of unique and non-constant elements of  $\{y_t, z_t, x_t\}$  to be stationary and ergodic stochastic process. Time series data are trending in nature and therefore prior to undertaking estimation the trending effect must be removed. The conventional way of de-trending a non-stationary time series separates the trending from the cyclical component and removes the unit root (Bleikh, & Young, 2016). Stationarity refers to a case where the mean of the data is time independent. Unit root tests was thus used to detect non stationarity in all the variables. Testing for stationarity or non-stationarity on the study data is an important factor because it could influence the behaviour of variables Ansari and Ahmed (2001). There are many tests used to detect the stationarity property of the data. In this study, Augmented-Dickey-Fuller and Philip-Perron tests unit root test were used.

#### **3.7.2 Dickey-Fuller GLS Test**

Dickey-Fuller Generalized Least square tests for a unit root in which the series has been transformed by a generalized least-squares regression (Elliott, Rothenberg, and Stock, 1996). This test is carried out on nested time series model to accommodate serial autocorrelation, auto covariance and covariance. Initially, the test is an augmented Dickey-Fuller test, except that the time series is transformed via a

generalized least squares (GLS) regression before performing it (Dickey and Fuller 1979; Hamilton, 1994). Augmented Dickey-Fuller test involves fitting a regression model.

$$\Delta y_t = \alpha + \beta y_{t-1} + \delta_t + \zeta_1 \Delta y_{t-1} + \zeta_2 \Delta y_{t-2} + \dots + \zeta_k \Delta y_{t-k} + \varepsilon_t \dots \dots \dots 3.9$$

Where,  $\Delta y_t$ : Represents first difference of each variable,  $\beta$ : Represents the co-efficient of the lagged variable,  $k$  is the number of lags to be specified using lags() option during estimation,  $\alpha$  is constant (the nonconstant option removes the constant term  $\alpha$  from regression during estimation),  $\delta_t$  is the time trend (the trend option includes the time trend  $\delta_t$  which by default is not included). Its null hypothesis is that  $\beta=0$ .

The DG-GLS test is performed on GLS detrended data with  $H_0 = y_t$  is a random walk possible with drift against alternative hypothesis that  $H_a = y_t$  is stationary about a linear time trend. Under this alternative hypothesis, the DF-GLS test is performed by first estimating the intercept and trend via GLS and this test has significantly been proved to have greater power than the previous versions of the augmented Dickey-Fuller test (Stock and Watson, 2011). The null hypothesis of non-stationary is rejected if the test statistic is greater than the MacKinnon's critical values. Therefore, the decision is taken, and null hypothesis is rejected if the test statistic in absolute terms is greater than the critical value at different levels of significance as 5%.

### 3.7.3 Phillips Perron Test

The test modifies the ADF test to accommodate serial correlation. The null hypothesis is that the data contains unit root against the hypothesis that their data is stationary. The model form estimated was as follows.

$$Y_y = \delta_t + \gamma Y_{t-1} + \gamma_1 \Delta Y_{t-2} + \dots + \gamma_p \Delta Y_{t-p} + \varepsilon_t \dots \dots \dots 3.10$$

Where;  $Y_t$ : Represents the current value.  $\delta_t$ : Represents the intercept.  $\gamma$ : Represents the co-efficient of the lagged variable.  $\varepsilon$ : Represents the stochastic error term (white noise process).  $P$ : Represents the optimum lag length selected by AIC and SBIC.

If the variables exhibited non stationarity properties, then the next step is to difference each univariate series. The differenced variables were plotted to see if they had become stationary. After plotting, each stationarity test was carried out on differenced variables. If it is confirmed that the differenced variables have achieved stationary property, the process of differencing is stop and concluded that variables are have achieved the integration property of any order denoted  $I(1)$ .

### 3.8 Diagnostic Tests

The study tested whether the data to be used followed the assumptions of multiple regression that is if the data is normally distributed, no multicollinearity between the variable and to test whether the variables have no autocorrelation.

#### 3.8.1 Normality Test

Test for normality is based on the skewness and kurtosis of a distribution (Jarque and Bera, 1987). According to Lilien (1995). Jarque–Bera test is a goodness-of-fit test. It tests whether sampled data have the skewness and kurtosis that followed a normal distribution. The JB statistic is calculated as follows

$$JB = \frac{n}{6} \left( S^2 + \frac{1}{4} (K - 3)^2 \right) \dots \dots \dots 3.11$$

Where,  $S$  is the skewness and  $K$  is the kurtosis.  $n$  is the number of observations and JB is Jarque-Bera. If  $S=0$  and  $K=3$  then the data followed standard normal distribution.

This statistic has an asymptotic  $\chi^2(2)$  distribution if the null hypothesis is correct (Jarque and Bera (1987)).

### 3.8.2 Autocorrelation Test

Durbin Watson Test developed by Watson and Durbin (1951). Error terms are assumed to be independent of each other. Autocorrelation is also referred to serial correlation is useful where there is a linear correlation between the error term for one observation and the next. This is more relevant to time series data where data is sequenced by time. Durbin Watson Test uses the following statistic.

$$d = \frac{\sum_{i=z}^n (\varepsilon_i - \varepsilon_{i-1})^2}{\sum_{i=1}^n \varepsilon_i^2} \dots \dots \dots 3.12$$

Where  $\varepsilon_i = y_i - \hat{y}$  (are the residuals),  $n$  is the number of elements in the sample and  $z$  the number of independent variables.  $d$  takes on values between 0 and 4. If  $d = 2$ , no autocorrelation,  $d$  is less than 2, positively auto correlated, Small values of  $d$  indicate successive error terms are positively correlated. and  $d$  is greater than 2, negatively auto correlated.

### 3.8.3 Test of Multicollinearity

Multicollinearity is described as state of high inter-correlation among study variable under study. If the data has high Multicollinearity the statistical inference made may not be reliable Lauren's (2018). Presence of Multicollinearity is observed through by observing of variation inflation factor (VIF) with the aid of tolerance factor and reciprocal. Multicollinearity may arise because of inclusion of a variable which is

computed from other variable in a dataset during analysis. The estimated equation for VIF is given as.

$$VIF_k = 1 / (1 - R_k^2) \dots \dots \dots 3.13$$

Where  $VIF_k$  the variance inflation is factor for variable  $k$ , and  $R_k^2$  is the coefficient of multiple determinations for variables. The decision rule is that if the VIF values is less than 10 it is concluded that there is no Multicollinearity whilst if the VIF factor is more than 10 then it is concluded than there is presence of Multicollinearity Thompson *et al.*, (2017).

### 3.9 Description and Measurement of the Variables

Table 3.1 describes the measurement for foreign direct investment, exchange rate, infrastructural development, level of technology, inflation and gross domestic product as a measure of economic growth.

**Table 3. 1: Description and Measurement of Variables**

<b>Variable</b>	<b>Description</b>	<b>Measurement</b>	<b>Prior Expectation</b>
<b>FDI</b>	The net inflows of investments	As a percentage of GDP (Bjorvatn, 2000)	
<b>Exchange Rate</b>	The value of a nation's currency in terms of the currency of another nation	Measured in US Dollar (Musyoka,& Ocharo, 2018)	+/-
<b>Infrastructura l Development</b>	Amount of money allocated to infrastructural development	Measured as percentage of GDP (Mahirwe & Long, 2019))	+/-
<b>Inflation</b>	The quantitative measure of rate of rise of average prices where a unit currency effectively buys less than it did in the prior period	Measured in percentages (Shaikh, Shaikh, & Mirza, 2019)	+/-
<b>Level of Technology</b>	The quantum and quality of industrially manufactured devices, tools, roads and there equipment together with software	Measured as a percentage of commercial services exports Gkatzoflias, D., Mellios, G., & Samaras, Z. (2013).	+/-
<b>GDP Growth</b>	Is the annual growth of monetary value of all goods and services made within a country during a specified period	Measured in annual percentage growth (Musyoka,& Ocharo, 2018)	+/-

Source: Author, 2022

### 3.10 Expected Output

The results of this study after analysis provides recommendations to the various sectors which would enable policy makers to implement appropriate policies towards



foreign direct investment thus ensuring the problems at hand are solved. The study is also a requirement for the completion of a Master of Arts in Economics.

### **3.11 Ethical Consideration**

According to Kombo and Tromp (2006) any research must consider the conduct of their research and give attention to the ethical issues associated with carrying out their research. The researcher obtained an introduction letter from school of business and Economics, Moi University. This enabled the researcher to obtain permission for research from NACOSTI. The researcher took the responsibility to only collect and analyse the required data to fulfil the objectives of the study. All research documents used to enhance the study were cited following APA citation style.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.1 Overview

The chapter presents results and discussion. These results are for descriptive such as mean, standard deviation, minimum and maximum values. Correlation analysis is also presented. Unit root tests and some of multivariate linear assumptions also discussed in detail. Finally, GMM model results and test of hypothesis further presented. Results are presented using graphs and tables.

#### 4.2 Descriptive Statistics

Table 4.1 presents the summary of descriptive statistics of the sampled data. Study period was from 1980 to 2020 giving a total of 41 observations. This is the period where the Kenya had some infrastructural development in terms of road network, electricity etc., high technology especially mobile subscription and internet coverage.

**Table 4. 1: Descriptive Statistics**

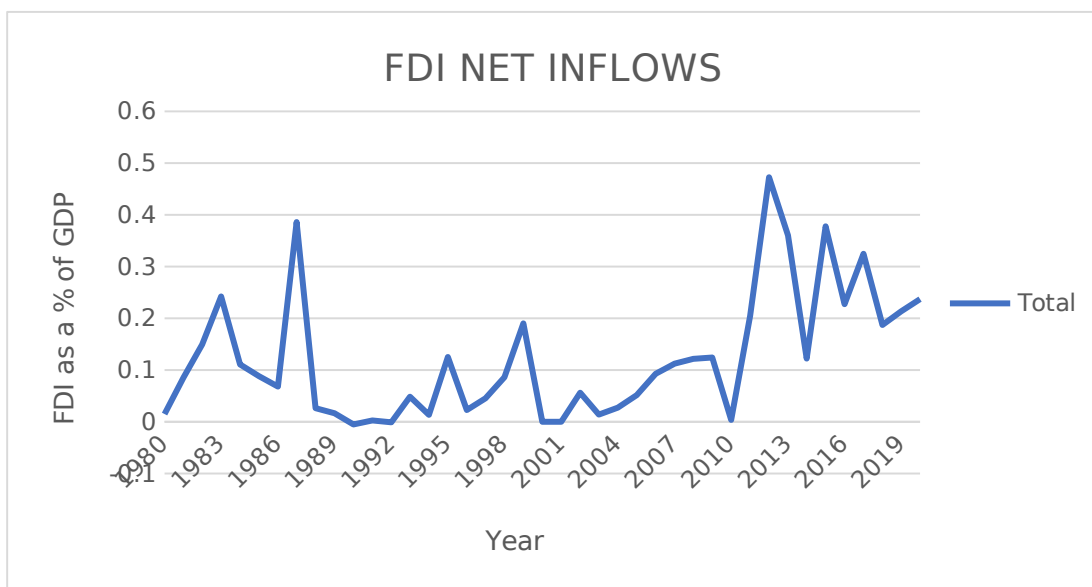
Variable	Obs.	Mean	Std. dev.	Minimum	Maximum
FDI Inflows	41	.123	.124	-.005	.473
Exchange rate	41	59.080	31.789	7.420	103.411
Infrastructural development	41	10.153	7.556	.230	26.090
Inflation	41	10.128	7.309	.933	41.989
Level of technology	41	10.445	6.034	2.842	21.607
GDP growth	41	4.004	2.266	-.799	8.406

Source: Research Data, 2022

#### 4.2.1 Foreign Direct Investment (FDI)

Figure 4.1 indicates the FDI trends in Kenya. Foreign direct investment (FDI) measured as a percentage of GDP had a mean of .123 percentage ratio to GDP. The standard deviation of .124 which is approximately equal to the mean signifies that for entire period under study, the FDI inflows are distributed around the average value of .123 percent. This was the net inflows of investments to Kenya.

From the year 1988 to 1994, Kenya experienced a decline in foreign investments. Like year 2000 and 2010. There is some years Kenya have had a negative FDI inflows in the year 1990 and 1992. This is the period Kenya was under high political tension of multipartyism.



**Figure 4. 1: FDI Net Inflows to Kenya from 1980-2020**

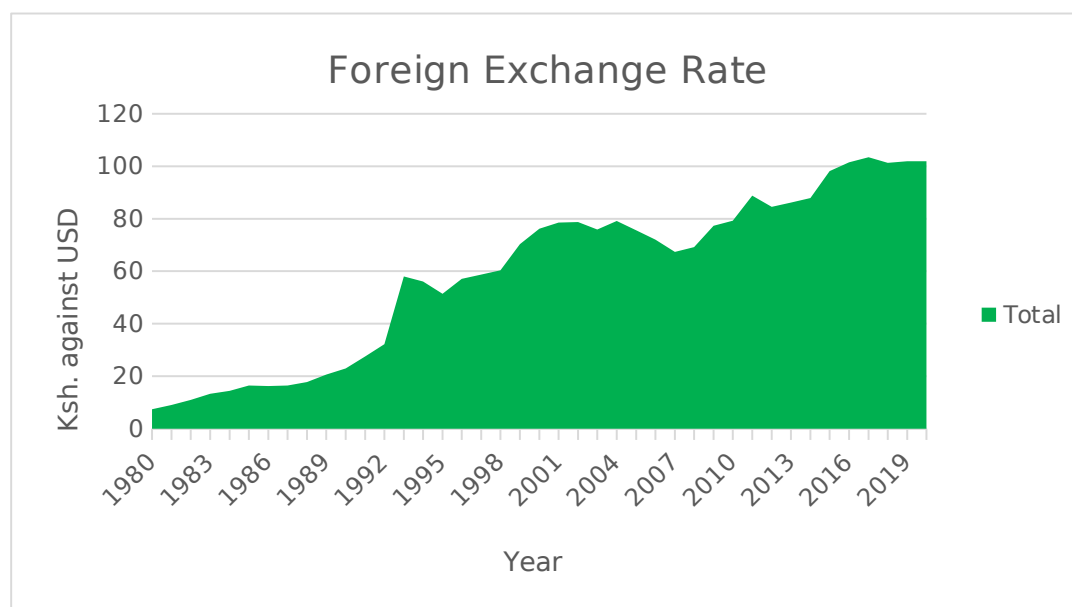
**Source: Source: Author, 2022**

Contrary to this, Kenya has experience high percentage of FDI inflows from the year 2011 and 2012 and a slight decline in 2014. According to Jenkins (2006), the magnitude of FDI reflects the confidence of global investment and plays a vital role in

increasing economic growth and creates employment opportunities in the recipient country via technological spill overs.

#### 4.2.2 Foreign Exchange Rate

Figure 4.2 shows Kenya's currency against US Dollar has been on an increasing trend. Foreign exchange rate is the value of a nation's currency in terms of the currency of another nation Measured in US Dollar. This study found that average exchange rate of Kenya shillings against US Dollar has an average of 59.08 with minimum and maximum of 7.420 and 103.41 respectively. This implies that Kenya Shilling has been weak, and this indicates US economy has been on positive trajectory compared to Kenya economy. This is evident that US dollar has been strong against Kenya shilling over the entire study period.



**Figure 4. 2: Foreign Exchange Rate from 1980-2020**

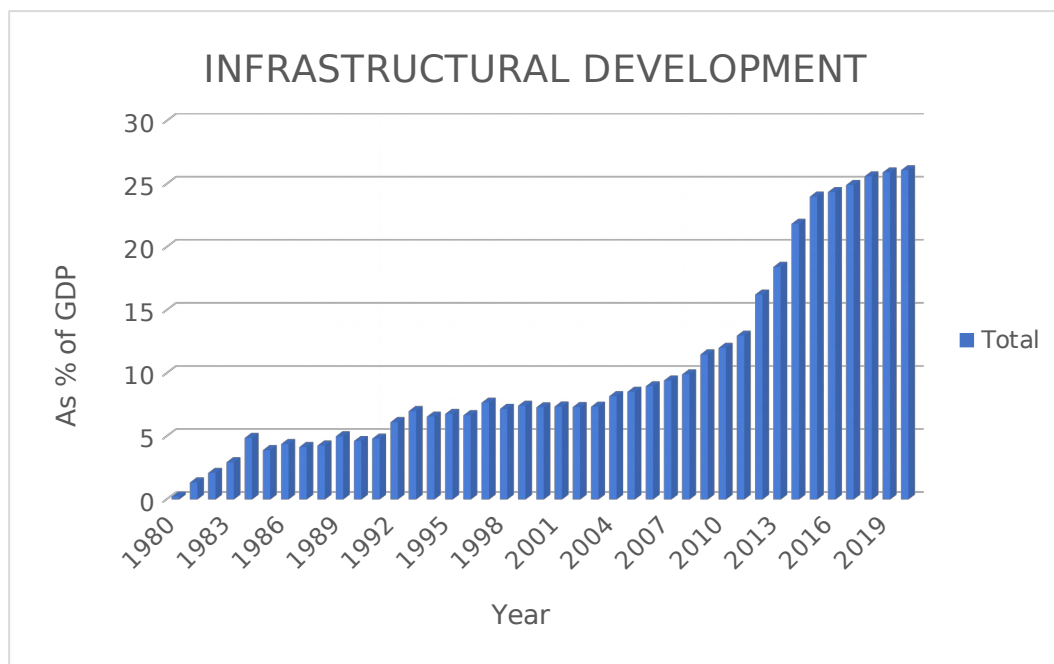
**Source: Author, 2022**

When imports exceed the number exports, investors hold currencies in optimism of high profits in the exchange market. Politics have an impact on exchange rates, with

printing of money seen during election years, political instability, uncertainty, and an over-reliance on donor funding.

#### 4.2.3 Infrastructural Developments

The minimum percentage of .23 and maximum of 26.09 percent infrastructural development has been experienced in Kenya. From the graphical representation depicted in by Figure 4.3, the infrastructural development has been on an increasing trend. Kenya have had high infrastructural development from the year 2012 to date.



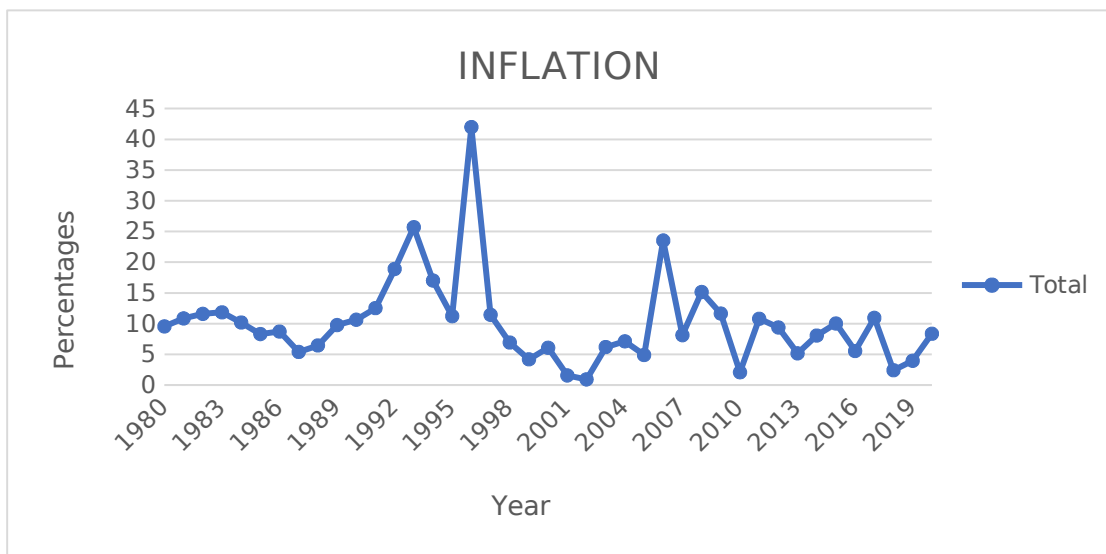
**Figure 4. 3: Infrastructural Development in Kenya from 1980-2020**

**Source: Source: Author, 2022**

This may be associated with the fact that the Kenya is under current devolved form of government where all 47 counties have experienced good progress in terms of developments. Infrastructural developments, the amount of money allocated to infrastructural development and measured as percentage of GDP (Mahirwe & Long, 2019) was found to be an average of 10.153 percent.

#### 4.2.4 Inflation Rate

Further, from Table 4.1, Kenya's inflation has been at 10.128 percent with standard deviation of 7.55 which is also close to the mean. The minimum value of inflation experienced in Kenya was .933 and highest being at 41.989. Figure 4.4 indicate that this maximum inflation was in the year 1996 and the minimum inflation in 2002. According to Shaikh, Shaikh and Mirza (2019), inflation is the quantitative measure of rate of rise of average prices where a unit currency effectively buys less than it did in the prior period, and it is measured in percentages.



**Figure 4. 4: Inflation Rate in Kenya from 1980-2020**

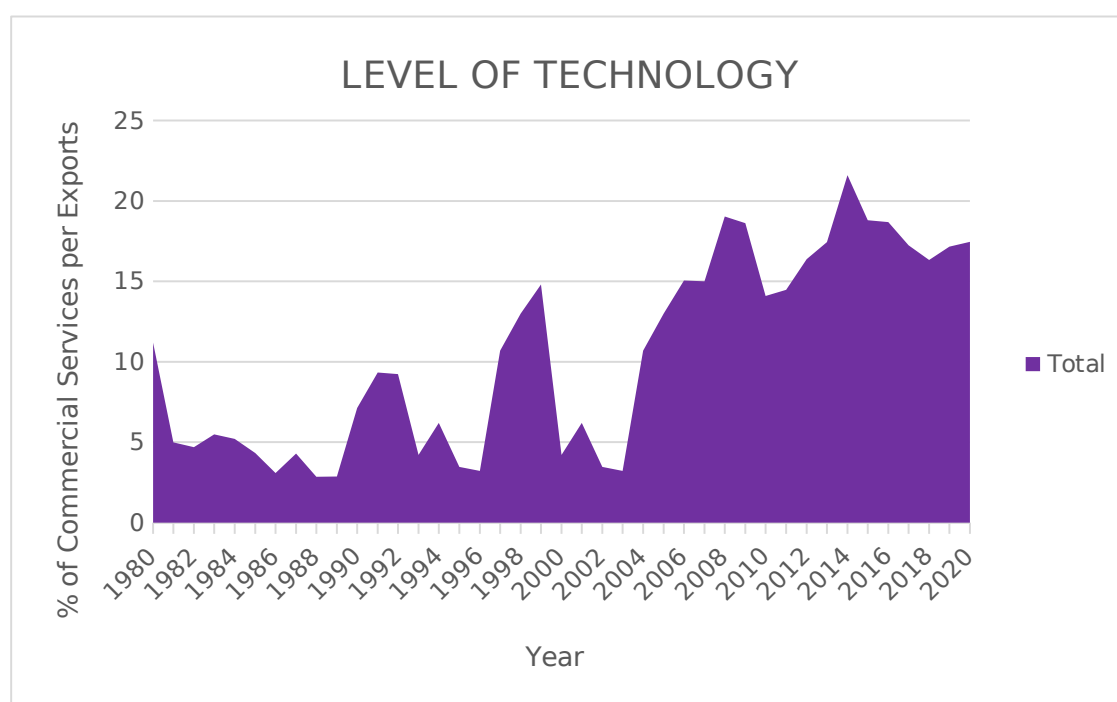
**Source: Source: Author, 2022**

#### 4.2.5 Level of Technology

Results indicate that level of technology has been on the rise from 2003 to 2020 (see Figure 4.5) with a mean of 10.444 and standard deviation of 6.033. The technological developments have changed the way in which the global market is operating, which means that Kenya, more so the manufacturing sector has to keep up with these trends,

in order to attain its contribution of 15% to the economy, as outlined in the Vision 2030.

Kenya is considered the leading technology and innovation hub in Africa. The development of a large-scale telecommunications infrastructure in Kenya, capable of delivering efficient and affordable info-communications services is recognized as a critical prerequisite for the country's economic growth.

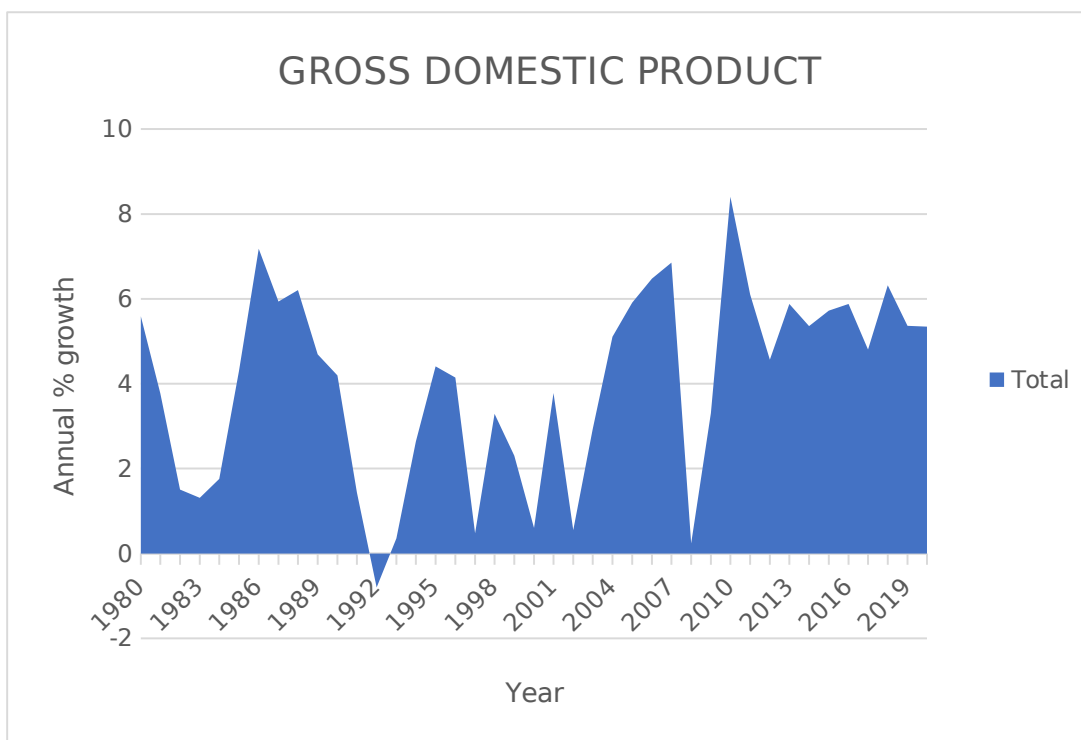


**Figure 4. 5: Level of technology in Kenya from 1980-2020**

**Source: Author, 2022**

#### **4.2.6 Economic Growth Measured Using GDP**

Lastly, one of the factors considered to affect FDI inflows in Kenya was economic growth measured using GDP. Results indicates that Kenya's GDP has been averaged at 4.004 with minimum being -.799 and maximum percentage of 8.406 and this is in the year 1992 and 2010 respectively as depicted in Figure 4.6. Kenya's economy grew at a rate of 4.7 percent per year from 2015 to 2019, significantly reducing poverty.



**Figure 4. 6: GDP Growth in Kenya from 1980-2020**

**Source: Author, 2022**

The COVID-19 shock hit the economy hard in 2020, causing disruptions in international trade and transportation, tourism, and urban services activity. Fortunately, the agricultural sector, a pillar of the economy, remained resilient, contributing to a 0.3 percent contraction in GDP. The annual growth of monetary value of all goods and services made within a country during a specified period and according to Musyoka and Ocharo (2018), measured in annual percentage growth.

A significant economic recovery has begun in 2021, though it remains highly uneven across sectors (with some, such as tourism, remaining under pressure). This has been aided by adequate agricultural harvests, global demand recovery, a partial resumption of international travel, and a broad-based recovery in manufacturing. According to a recent Central Bank of Kenya (CBK) survey, most hotels are now open, and average bed occupancy has tripled since its low in mid-2020 (although it remains well below



pre-COVID-19 levels). GDP growth is expected to be 5.0 percent in 2021, and poverty is expected to begin declining again after rising earlier in the pandemic.

### 4.3 Correlation Analysis

Table 4.2 indicates exchange rate (EXR) and FDI are significantly correlated ( $\rho = .344, p = .0276 < .05$ ). Infrastructural development (IND) and foreign exchange rate have strong negative correlation  $\rho = -.831, p = .000 < .05$ .

**Table 4. 2: Pearson Correlation Coefficients**

	<b>FDI</b>	<b>EXR</b>	<b>IND</b>	<b>INFL</b>	<b>TECH</b>	<b>GDPG</b>
<b>FDI</b>	1.000					
<b>EXR</b>	.344*	1.000				
	(.028)					
<b>IND</b>	.569*	-.831*	1.000			
	(.000)	(.000)				
<b>INFL</b>	-.180	-.187	-.217	1.000		
	(.259)	(.242)	(.173)			
<b>TECH</b>	.484*	.697*	.765*	-.185	1.000	
	(.001)	(.000)	(.000)	(.247)		
<b>GDPG</b>	.263	.234	.371*	-.258	.319*	1.000
	(.096)	(.140)	(.017)	(.103)	(.042)	

Note: values in () are the p-values. \* Indicate significant at .05 level.

Source: Author, 2022

This implies high exchange rates inversely affects infrastructural development that is it weakens developments. Level of technology (TECH) and FDI inflows have a positive and significant correlation ( $\rho = .484, p = .001 < .05$ ). High level of technology attracts investors and thus more foreign direct investments. Though GDPG and FDI are insignificant, the direction of association is positive, meaning economic growth of a country lures foreign investors. Inflation (INFL) have shown a negative relationship with level of technology (TECH), economic growth (GDPG), FDI, exchange rate and

infrastructural development. This implies inflation of a country does not attract investors and it affects major components of an economy.

The degree and direction of causation can be determined using the correlation relationship between variables. It determines how variables are closely related to one another, as well as the direction and strength of their relationships. There are several methods for determining correlation analysis, such as using the Pearson correlation coefficient or the Spearman or Kendall correlation coefficients. In this study, Pearson correlation was used this is because Pearson's correlation is used when you want to see if there is a linear relationship between two quantitative variables. The correlation coefficient ranges between -1 and +1. When the value for is +1, variables have perfect positive association; when it is -1, variables have perfect negative association. Values close to zero are referred to as weak correlation, while values greater than zero are referred to as strong correlation.

#### **4.4 Unit Root Test**

According to William Greene (2005), time series data contains unit roots, that is, the mean and variance of the data change over time. A series or rather data containing a unit root is differenced in any order until it reaches this stationarity property. Stationarity, also known as integration of a time series variable, is an important phenomenon in econometrics and statistics analysis because it influences data behavior (Ansari et al., 2011). This property was tested in this study using two conventional tests, the Augmented Dicky Fuller and the Philip-Perron tests. Reason for using the two is for the purpose of robustness

#### 4.4.1 Augmented Dickey Fuller Test Results

The results of Augmented Dickey Fuller (ADF) depicted in Table 4.3 showed that all the study variables except level of technology had no unit root rather stationary at levels (all p-values > 0.05 level of significance).

**Table 4. 3: Augmented Dickey Fuller Test Results**

New-West lags = 3				
<b>Stationarity Test at Levels</b>				
Variable	Test statistic z(t)	5% Critical value	p-value	Remarks
FDI	-3.802	-2.958	.003	Stationary
EXR	-3.315	-2.958	.014	Stationary
INF	-4.081	-2.958	.001	Stationary
IND	-5.989	-2.958	.000	Stationary
TECH	-2.117	-2.958	.238	Non-Stationary
GDP	-5.568	-2.958	.000	Stationary
<b>Stationarity Test after First Difference</b>				
FDI	-7.246	-2.961	.000	Stationary
EXR	-5.850	-2.961	.000	Stationary
INF	-9.021	-2.961	.000	Stationary
IND	-12.042	-2.961	.000	Stationary
TECH	-7.056	-2.961	.000	Stationary
GDP	-8.937	-2.961	.000	Stationary

Note: Test uses Mackinnon z- statistics, z(t). The Augmented Dickey Fuller test critical value is as follows at levels -2.958 at 5% At first difference, this critical value is -2.961 at 5%

Source: Author, 2022

At first difference, the probabilities were less than 5 percent for z (t)-statistic probabilities and this prompt null hypotheses to be rejected and alternative hypotheses accepted. In conclusion, the data were stationary at levels but for level of technology,

it became stationary after first difference. The first test that used was the Augmented Dickey Fuller or ADF test, suggested by Dickey & Fuller (1979). Its null hypothesis is that variables contain unit root against the alternative hypothesis that data are stationary. The aim is to reject the null and accept the alternative hypothesis.

#### 4.4.2 Phillips Perron Test Results

Results in Table 4.4 indicates that FDI, exchange rate, inflation, infrastructural development, and GDP were stationary at levels whereas levels of technology had unit roots at levels. This is because their probabilities were less than 0.05 level of significance, or the absolute value of  $z(t)$  statistic were greater than absolute critical value at 5 percent.

**Table 4. 4: Phillips Perron Test Results**

New-West lags = 3				
Stationarity Test at Levels				
Variable	Test statistic $z(t)$	5% Critical value	p-value	Remarks
FDI	-3.780	-2.958	.003	Stationary
EXR	-3.227	-2.958	.019	Stationary
INF	-4.179	-2.958	.001	Stationary
IND	-4.710	-2.958	.000	Stationary
TECH	-2.118	-2.958	.237	Non-Stationary
GDP	-5.575	-2.958	.000	Stationary
Stationarity Test after First Difference				
FDI	-8.540	-2.961	.000	Stationary
EXR	-5.837	-2.961	.000	Stationary
INF	-9.629	-2.961	.000	Stationary
IND	-14.469	-2.961	.000	Stationary
TECH	-7.315	-2.961	.000	Stationary
GDP	-10.740	-2.961	.000	Stationary

Note: Test uses Mackinnon  $z$ - statistics,  $z(t)$ . Philip Perron test critical value is as follows at levels -2.958 for 5%. At first difference, this critical value is -2.961 for 5%

Source: Author, 2022

The null hypothesis of the test is  $H_0$ : All the data has unit root against alternative hypothesis that all the data are stationary. For the data to be stationary, the probabilities should be less than 0.05 critical value, or the value of the  $z(t)$  should be greater than the absolute critical value at 5 percent. It is also clear that all the data attained stationarity after first differences as shown in the lower part of the table and further concurs with the results of ADF test.

The study concluded by using the data at difference for level of technology whereas the rest at levels. This test was carried out on the finite sample properties to improve and to accommodate more modelling framework (Greene, 2008 and Magee, 2008). In a situation where there is high degree of auto correction the Augmented Dickey Fuller test cannot be able to distinguish clearly between non-stationary and stationary series and is quite sensitive to breaks (Im and Lee, 2009). To overcome this limitation and to supplement the ADF test when the data used shows the presence of serial correlation amongst them and are also time dependent, the semi-parametric Phillips-Perron test, which gives robust estimates is used.

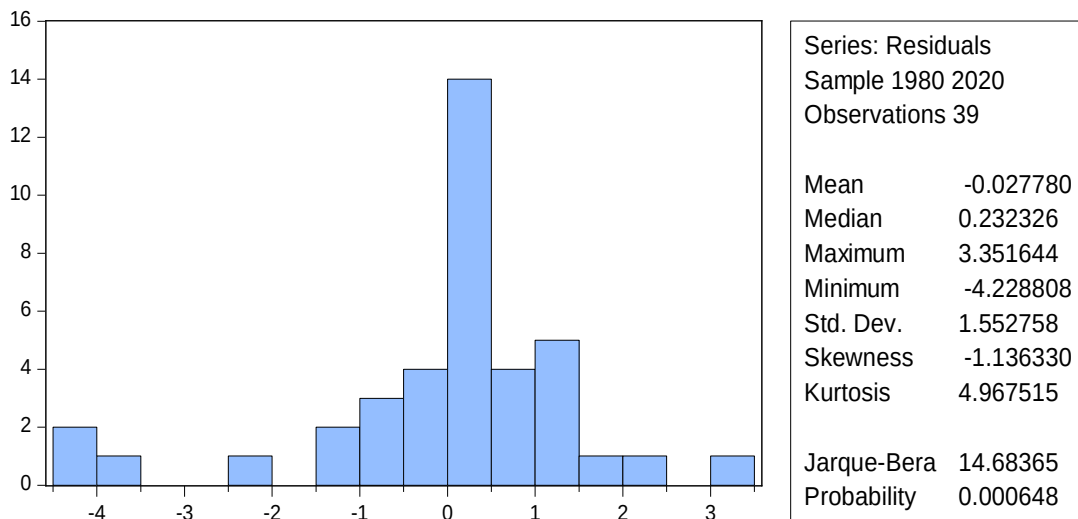
#### **4.5 Diagnostic Tests Results**

The study tested the following multivariate linear regression assumptions (diagnostic Tests) before testing for hypotheses for statistical inference. This is to confirm that the data followed normal distribution, have no multicollinearity, no autocorrelation and the variance are homogeneous (no heteroscedasticity).

##### **4.5.1 Normality**

Normality test helps to determine how likely it is for a random variable underlying the data sets to be normally distributed. The study carried a Skewness-Kurtosis test.

Skewness is a measure of symmetry of the probability distribution of a random variable about its mean.



**Figure 4. 7: Normality Test Results**

**Source: Author, 2022**

It represents the amount and the direction of skew while kurtosis represents the peak of the distribution. The null hypothesis residuals are multivariate normal. The results confirmed that the data followed a normal distribution since the graph is a bell-shaped and skewness of -1.136 and kurtosis of 4.967. Data that follows a standard normal with mean 0 and variance 1 has a skewness of 0 and kurtosis of 3 according to Robert Hall, David Lilien, et al. (1995).

#### 4.5.2 Multicollinearity Test

In this study, multicollinearity was examined using Variance Inflation Factors (VIF). For VIF values greater than 10, Multicollinearity is deemed to be present (Nachtsheim, 2004). The VIF are calculated as shown below. Variance Inflation Factors  $VIF = 1/1-R^2$ , Where VIF= variance inflation factor,  $R^2$ = coefficient of determination,  $1/VIF$ = tolerance, The VIF values for multicollinearity tests are as

shown in Table 4.5 showed that there was no Multicollinearity between the independent variables. This is because all the variables had a VIF values less than 10 (Nachtsheim, 2004).

**Table 4. 5: VIF Test for Multicollinearity**

<b>Variable</b>	<b>VIF</b>	<b>TOLERANCE (1/VIF)</b>
Exchange rate	4.67	.214
Infrastructural development	4.22	.237
Level of technology	1.59	.628
GDP growth	1.14	.875
Inflation	1.09	.916
<b>Mean VIF</b>	<b>2.54</b>	

Source: Author, 2022

#### **4.5.3 Autocorrelation Test**

This study used Breusch-Godfrey Lagrangian Multiplier (LM) test to check for the presence of autocorrelation and results are as shown in Table 4.6. The null hypothesis is no serial correlation at lag order. Result for F-statistic (Fisher's statistic) is 0.9428 greater than .05 thus the null hypothesis of no serial correlation or rather no autocorrelation was accepted.

Further the Durbin Watson statistic is 1.721 which is between threshold of 1.5 and 2.5 to justify no autocorrelation. Autocorrelation also known as serial correlation is a term used in time series when the error term occurring at one period crosses over into another period. It may also occur when the error term relating to any observation is influenced by the error term relating to any other observation. The error term in the

linear regression requires that successive values of the error term be sequentially independent (Mukras, 1993).

**Table 4. 6: Breusch-Godfrey Serial Correlation LM Test Results**

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Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.005219	Prob. F(1,33)	0.9428
Obs*R-squared	0.006166	Prob. Chi-Square (1)	0.9374

Test Equation:

Dependent Variable: RESIDUALS

Presample and interior missing value lagged residuals set to zero.

---

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEXR	-0.008378	0.447737	-0.018712	0.9852
LIND	0.006886	0.510281	0.013495	0.9893
LINF	0.009953	0.350268	0.028415	0.9775
LTECH	-0.000143	0.489586	-0.000291	0.9998
LGDPG	0.000490	0.299460	0.001636	0.9987
RESID (-1)	-0.015283	0.211567	-0.072239	0.9428
S.E. of regression	1.666386	Akaike info criterion		3.999830
Sum squared residual	91.63582	Schwarz criterion		4.255763
Log likelihood	-71.99668	Hannan-Quinn criterion.		4.091656
Durbin-Watson stat	<b>1.720984</b>			

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**Source: Author, 2022**

#### 4.5.4 Heteroskedasticity Test

The study tested for heteroskedasticity using Breusch-Pagan-Godfrey. Result indicates that the probability of residual for all the variables except for inflation (p=.0034) were insignificant meaning the null hypothesis of residuals are homoscedastic is accepted. When heteroskedasticity is present, elimination is by



having a robust kind of regression (Greene, 2012). Heteroscedasticity takes place when the variance of the error term keeps changing for all the values of independent variables.

The error term can vary from one observation to another meaning the variance of error term is dependent on the magnitude of the independent variables. The unbiased character of the OLS estimator is not affected by the presence of heteroscedasticity though it renders it inefficient. This is because in small samples ordinary least squares estimator will not have the minimum variance among the class of unbiased estimators and in large samples is asymptotically inefficient.

**Table 4. 7: Heteroskedasticity Test: Breusch-Pagan-Godfrey**

<b>Heteroskedasticity Test: Breusch-Pagan-Godfrey</b>				
F-statistic	4.676461	Prob. F(5,33)		0.0025
Obs*R-squared	16.17369	Prob. Chi-Square (5)		0.0064
Scaled explained SS	24.88327	Prob. Chi-Square (5)		0.0001
Dependent Variable: RESID^2				
Method: Least Squares				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	6.511087	5.105172	1.275390	0.2111
LEXR	3.091814	1.720442	1.797104	0.0815
LIND	-1.928308	1.432453	-1.346158	0.1874
LINF	-2.898797	0.919731	-3.151787	0.0034
LTECH	-2.182087	1.155545	-1.888362	0.0678
LGDPG	-1.350624	0.746798	-1.808553	0.0796
S.E. of regression	3.932602	Akaike info criterion		5.717118
Sum squared residuals	510.3569	Schwarz criterion		5.973051
Log likelihood	-105.4838	Hannan-Quinn criterion.		5.808945

F-statistic	4.676461
Prob(F-statistic)	0.002453

Source: Author, 2022

#### 4.6 GMM Estimation

Table 4.8 presents the GMM estimators. Based on this, exchange rates had a negative and significant effect on FDI inflows to Kenya from 1980-2020. Further, infrastructural development, level of technology were positive and significant factors that influenced foreign direct investment. However, inflation and economic growth rate (GDP growth) did not have a significant effect though the direct of effect was positive.

**Table 4. 8: GMM Estimation Results**

Number of parameters = 6						
Number of moments = 6						
Initial weight matrix: Unadjusted						
Variables	Coef.	Std. Err.	z	p> z	[95% Interval]	Conf.
EXR	-2.222	.671	-3.31	.001	-3.538	-.906
IND	1.806	.397	4.54	.000	1.027	2.585
INFL	.539	.558	.970	.334	-.554	1.634
TECH	1.214	.467	2.60	.009	.299	2.128
GDPG	.124	.321	.390	.698	-.504	.753
Constant	-1.826	1.530	-1.19	.233	-4.825	1.174

Source: Author, 2022

#### 4.7 Hypothesis Test Results

The study hypothesized and tested objectives using generalized method of moments as shown in Table 4.8

$H_{O_1}$ : There is no Significant Effect between Exchange Rate and FDI Inflows in Kenya.

The results presented in Table 4.8, the GMM estimate coefficient for exchange rate was negative and significant and influenced FDI at 222.2% (

$\beta = -2.222$ ,  $p\text{-value} = .001$ .) at 5 percent level of significance. This  $HO_1$  hypothesis was rejected and concluded that exchange rate influences the foreign direct investment in Kenya.

$HO_2$ : There is no significant effect between Infrastructural Development and FDI Inflows in Kenya.

Results showed a positive and highly significant effect of infrastructural development on FDI as indicated by GMM estimator  $\beta = 1.806$ ,  $p\text{-value} = .000$ . For a unit increase in infrastructural development change by a unit, attracts investors positively by 180.6 percent. Since the probability was significant at 5 percent level, the hypothesis,  $HO_2$  was rejected.

$HO_3$ : There is no Significant Effect between Inflation and FDI Inflows in Kenya.

Result from GMM model estimation presented in Table 4.8 showed a positive but insignificant effect with coefficient  $\beta = .539$ ,  $p\text{-value} = .97$ . Therefore,  $HO_3$ : There is no significant effect between inflation and FDI inflows in Kenya, failed to be rejected and concluded that there was insufficient statistical evidence to show a significant effect of inflation on FDI inflows in Kenya from 1980-2020.

$HO_4$ : There is no Significant Effect between Level of Technology and FDI Inflows in Kenya.

The study found out that the level of technology was positive and significantly affecting FDI inflows in Kenya. The GMM estimator for level of technology was  $\beta = 1.214$ ,  $p\text{-value} = .009$ . For every one percentage change in level of technology, FDI was influenced by 121.4 percent. Thus,  $HO_4$ : There is no significant effect

between level of technology and FDI inflows in Kenya was rejected and concluded that the higher level of technology the high the FDI inflows.

$H_{O_5}$ : There is no significant effect between GDP and FDI inflows in Kenya.

The findings showed Inflation and GDP growth did not show significance, but they had positive effect at 53.9% ( $\beta = .539, p\text{-value} = .334 > 0.05$ ) and 12.4% ( $\beta = .124, p\text{-value} = .698 > .05$ ) respectively from this, the study failed to reject the hypothesis  $H_{O_5}$ : There is no significant effect between GDP and FDI inflows in Kenya

#### 4.8 Discussion of Results

Before interpretation of the generalized method of moments (GMM), discussion of some of the ways of its estimation is done. There three ways of GMM estimation; one-step, two-step and iteration. In one-step, parameters are estimated based on an initial weight matrix, and no updating of the weight matrix is performed except when calculating the appropriate variance–covariance (VCE) matrix. Two-step obtains parameter estimates based on the initial weight matrix, computes a new weight matrix based on those estimates, and then re-estimates the parameters based on that weight matrix while in iteration GMM, parameters are estimated based on the initial weight matrix, computes a new weight matrix based on those estimates, re-estimates the parameters based on that weight matrix, computes a new weight matrix, and so on, to convergence. Convergence is declared when the relative change in the parameter vector is less than previous weight matrix.

The sample moment condition is the product of an observation-level error function that is specified. In this study, we used to the one-step option because the study found the number of moments were 6 which is same as the number of parameters. This

implies that the estimator is exactly identified. When it is, each sample moment condition can be solved exactly, and there are no efficiency gains in optimally weighting the moment conditions. The generalized method of moments (GMM) estimator is an essential part of modern econometrics and is covered in all major textbooks, including Cameron and Trivedi (, 2010), Davidson and MacKinnon (2004), Greene (2012), and Ruud (2013). (2000), Hall's book on GMM with a focus on time-series applications is an excellent resource (2005).

From the findings, exchange rate, infrastructural development and level of technology were significant factors of FDI inflows in Kenya whereas inflation and GDP growth did not. Kenya's exchange rate has an impact on foreign direct investment. Currency exchange rates, as a result, have the potential to impact exchange of goods, economic growth, capital flows, inflation, and interest rates. Foreign investment is more likely to flow into countries with stable currencies and strong governments. For a country to attract capital from foreign investors, it must have a relatively stable currency. Otherwise, the prospect of currency depreciation-induced exchange-rate losses may discourage foreign investors. The study opines that monetary and fiscal policies have an impact on the volatility of exchange rates. Wasike, V. N. (2013) argued that some policies have been discovered to be outdated, and only the Central Bank governor who approves money supply, global financial guidelines on credit, and unplanned changes in interest rate rules affected exchange rate fluctuations in Kenya.

Foreign investment flows are critical elements in the economic evolution of countries as part of the globalization process. Previous research on the exchange rate demonstrates its importance as a key factor in trades and FDI flows. Although the relationship between exchange rate volatility and foreign investor flows is empirically investigated, the relationship between exchange rate volatility and international

trading flows is broadly not identified. Given the importance of the subject at hand, it is necessary to consider the determinants of FDI, particularly the volatility of exchange rates, and to create better conditions for attracting FDI in Kenya.

Exchange rates thus have an impact on FDI in the sense that when one currency loses value relative to another, investors will be drawn to that host country because it will be cheaper to operate in that host country. The relationship between exchange rates and FDI is that if a currency loses value, FDI is expected to rise, whereas if a currency gains value, FDI is expected to fall (Madura & Fox, 2011). The significance of the exchange rate comes from the fact that it allows for self-adjustment of the rate based on the supply and demand for foreign exchange in the economy. This self-adjustment is responsible for restoring market equilibrium without changing the level of reserves. It is also important in allowing countries to develop their own monetary policies without having to worry about how they will affect the balance of payments. From the study, currency exchange rates have the potential to influence merchandise trade, economic growth, capital flows, inflation, and interest rates. Foreign capital is more likely to flow into countries with strong governments, dynamic economies, and stable currencies. A relatively stable currency.

The findings support the work Ndungu (2000) who cited that external shocks and imbalance effects are typically manifested in exchange rate movements rather than reserve movements or central bank intervention to control the adjustment process. Further, Exchange rates are largely determined by market supply and demand. The price of currencies is determined by flexed exchange rate systems, Ndungu (2000).

Furthermore, according to Madura and Fox (2011), a corporation looking to invest in another country will always look for a host country with a local currency that is

expected to strengthen against their own. a firm will invest funds in a country whose local currency is weak to earn from new operations that can be converted back to the foreign firm's currency at a better exchange rate on a regular basis. Exchange rate movements have an impact on FDI values because they affect the expected amount of cash inflows received from their investments as well as the amount of cash outflows required to continue operating these investments. Firms with operations in countries other than their mother countries must understand the forces that cause exchange rates to fluctuate over time to predict how currencies will be affected by these forces and, as a result, be able to mitigate these losses.

The other major factor of FDI inflows to Kenya considered in the study is the infrastructural development. That is quality infrastructure lowers the cost of doing business and improves the investment climate, attracting FDI, according to empirical evidence. The findings concur with Wekesa, Wawire and Kosimbei, (2016) that improved transportation infrastructure, communication infrastructure, water, and waste infrastructure, all been identified as important determinants of FDI inflows into Kenya. As a result, continued infrastructure development is critical for Kenya to attract more

The availability of such infrastructure is the first step towards competing in the global market. The second step is creating an environment in which our businesses can now integrate and keep up with these technological advancements, in order to understand the new market dynamics, needs of our customers, and increased capability to compete locally and in the regional markets. The level of technology is the quantum and quality of industrially manufactured devices, tools, roads and there equipment together with software and measured as a percentage of commercial services exports as per Gkatzoflias, Mellios, and Samaras (2013).

FDI because quality infrastructure provides investors with a conducive investment climate in which to operate. Kenya's FDI inflows as a percentage of GDP have increased marginally over the last four years, rising from 0.4 percent in 2010 to 0.9 percent in 2013. Nonetheless, evidence suggests that good infrastructure lowers the cost of doing business and thus attracts FDI. Despite increased budgetary allocation to the infrastructure sector since the year 2000, Kenya has visible signs of infrastructure inadequacy and inefficiency. Zhumakankyzy, & Mintayevich, (2017) examined the possible factors that determines foreign direct investment inflows into the region of Eurasian Economic Union, along with motivations for investment into other neighbouring economies. According to Gachino (2009), studied the relevance of industrial policy and institutions industrial development in Kenya and found out that Foreign Direct Investment concentrating on positive externalities, competency development and performance. The study discovered industrial development is a positive determinant of Foreign Direct Investment through the positive externalities. However, the study proposed that role of Foreign Direct Investment in industrialization can be improved by encouraging a strong science, technology, and innovation culture.

Furthermore, this study supports Nyaosi (2011) that attracting companies/industries and entrepreneurs is a sure way of attracting FDI. FDI provides financial resources to host countries, introduces new technologies, and improves the efficiency of existing ones. Foreign direct investment also facilitates access to export markets, thereby contributing significantly to the strengthening of domestic economies' export capabilities. Mwega (2009), believes that FDI improves skills and management techniques and may provide cleaner technologies and modern environmental management systems. Importantly, FDI aids in the development of a host country's



infrastructure. In Kenya, for example, the auctioning of two mobile phone operators in 1999 and 2000 resulted in the rapid development of telecommunication infrastructure (UNCTAD 2005). Better access to improved infrastructure services is one of the components of a favourable investment climate for foreign investors, as well as an important driver of long-term economic growth.

FDI brings new technologies to host countries, improves the efficiency of existing technologies, and brings financial resources. Foreign Direct Investment also facilitates access to international markets and plays an important role in the development and strengthening of host economies' export capabilities. Foreign direct investment (FDI) has the potential to change management and corporate governance, improve domestic competencies, and transfer modern and "greener" technologies to the host country. The importance of FDI in modernization, employment, income growth, and development has prompted several SSA countries to implement FDI attraction and promotion strategies. However, Sub-Saharan African countries perform worse than any other region in the world in terms of FDI attractiveness (UNCTAD 2018).

Technology being one of the factors that attracts foreign investors, several methods of idea and technology transmission have been identified, including international trade: imports of high-technology products (Kwark and Shyn 2006); foreign technology payment; direct adoption of foreign technology and human capital acquisition (Park 2004; Le 2008; Le and Bodman 2011). Furthermore, the findings support Bodman and Le (2013) that foreign direct investment (FDI) is regarded as one of the most important means of cross-border technology diffusion because FDI inflows contain knowledge about new technologies and materials, production methods, or organizational management skills.

Nguea, S. M. (2020). FDI is essential in adopting new technologies, skills, and managerial capabilities in various sectors of the economy that have historically been difficult to raise using domestic savings; otherwise, technology importation from abroad would be difficult. This would be exacerbated by the fact that transferring technology to firms with little experience is risky, as they will struggle to use it and it will come at a high cost. Many issues are caused by FDI in the form of benefits to the home country that are not responsible for generating income in the host country. FDI is important for developing countries because it provides the resources needed to maximize economic development (Ismaila & Imoughele, 2010). Moreover, results concur Ly, Esperança and Davcik, (2018) who studied and found out that various structural transformation positively influences the inflows of Foreign Direct Investment in Kenya. The investigation the influence of linguistic and technological relationships between countries on foreign direct investment, by use of an extended gravity model.

## CHAPTER FIVE

### SUMMARY OF FINDINGS AND CONCLUSIONS, POLICY

#### 5.1 Overview

This chapter presents the summary, conclusions discussions theory implications and recommendations of the research findings presented in chapter four. The study sought to establish how some selected macroeconomic determinants on foreign direct investment to Kenya from 1980-2020. These macroeconomic variables are foreign exchange rate, infrastructural development, inflation, level of technology and economic growth rate.

#### 5.2 Summary of Findings

In summary, the study found that Kenya has experience high percentage of FDI inflows from the year 2011 and 2012 and a slight decline in 2014. This study found that average exchange rate of Kenya shillings against US Dollar has an average of 59.08 with minimum and maximum of 7.420 and 103.41 respectively. Kenya have had high infrastructural development from the year 2012 to date. This may be associated with the fact that the Kenya is under current devolved form of government where all 47 counties have experienced good progress in terms of developments. Kenya's inflation has been at 10.128 percent with standard deviation of 7.55 which is also close to the mean. The minimum value of inflation experienced in Kenya was .933 and highest being at 41.989. The maximum inflation was in the year 1996 and the minimum inflation in 2002

Further, level of technology has been on the rise from 2003 to 2020 with a mean of 10.444 and standard deviation of 6.033. The technological developments have changed the way in which the global market is operating, which means that Kenya,

more so the manufacturing sector must keep up with these trends, to attain its contribution of 15% to the economy, as outlined in the Vision 2030. Kenya is considered the leading technology and innovation hub in Africa. The development of a large-scale telecommunications infrastructure in Kenya, capable of delivering efficient and affordable info-communications services is recognized as a critical prerequisite for the country's economic growth. Findings indicates that Kenya's GDP has been averaged at 4.004 with minimum being -.799 and maximum percentage of 8.406 and this is in the year 1992 and 2010 respectively. Kenya's economy grew at a rate of 4.7 percent per year from 2015 to 2019, significantly reducing poverty. The COVID-19 shock hit the economy hard in 2020, causing disruptions in international trade and transportation, tourism, and urban services activity.

Exchange rate and FDI were significantly correlated ( $\rho = .344, p = .0276 < .05$ ). Infrastructural development and foreign exchange rate have strong negative correlation  $\rho = -.831, p = .000 < .05$ . This implies high exchange rates inversely affects infrastructural development that is it weakens developments. Level of technology and FDI inflows have a positive and significant correlation  $\rho = .612, p = .000 < .05$ ). High level of technology attracts investors and thus more foreign direct investments. Though GDP and FDI are insignificant, the direction of association is positive, meaning economic growth of a country lures foreign investors. Inflation have shown a negative relationship with level of technology, economic growth, FDI, exchange rate and infrastructural development. This implies inflation of a country does not attract investors and it affects major components of an economy. Inferentially, based on the GMM estimators, exchange rates had a negative and significant effect on FDI inflows to Kenya from 1980-2020. Further, infrastructural development, level of technology were positive and significant factors that influenced foreign direct investment.

However, inflation and economic growth rate (GDP growth) did not have a significant effect though the direct of effect was positive.

### **5.3 Conclusions**

In conclusion and based on the findings, Foreign Direct Investment (FDI) is a critical source of capital for developing-country investments. For Kenya, like many other emerging markets, require ongoing foreign investment to stimulate the economy and improve welfare services. FDI is an important part of Kenya because it not only provides the country with much-needed foreign exchange but also allows it to benefit from new technology and efficiency. Foreign direct investment (FDI) is attracted by a strong currency that has the potential to grow. It has been observed that an increase in exchange rates leads to an increase in FDI.

When one country seeks to invest in another, the benefit sought must be greater than the risks encountered. FDI's generate new job opportunities because, once a business is established, it recruits and trains locals in the host country, transferring skills and technological know-how while also providing employment. According to Kinuthia (2010), foreign direct investment (FDI) typically represents a long-term commitment to the host country. Because there are no obligations to the host country, it is a preferred form of investment.

The study concludes that an increase in the value of imports, a decrease in the supply of foreign currencies, and the depletion of local currency all cause exchange rates to rise and fall. According to the findings of the study, increasing the competitiveness of Kenyan products in the international market had a significant impact on the country's balance of payments. Protecting the country from external shocks such as high fuel prices and famine is critical and requires prompt action. Currency exchange rate

fluctuation was influenced by political and psychological factors, as political instability causes high currency exchange rates; elections and political conflicts cause an increase in currency inflation rate.

#### **5.4 Implications of Findings**

The findings are in line with Neoclassical theory of investment which argues that the inflows of Foreign Direct Investment increase the capital growth in an economy both directly and indirectly through research and development, technology transfers and introduction of new forms of human capital, growth in industries and the real estate investments. Further, it also supported the Purchasing Power parity (PPP) theory that the nominal exchange rate between currencies of two countries should be equivalent to the ratio of aggregate price levels between the two countries, therefore meaning that a unit of currency of one country will have the similar purchasing power in a foreign nation.

Exchange rates, in theory, have an impact on FDI because the rate at which one currency is defined in terms of another determines the effectiveness of an investment. The factors influencing how much one currency is exchanged for another in determining exchange rates ultimately determine how much FDI is invested in a country. Because FDI is determined by the amount of a currency that is available for use, the two cannot be considered separately. An investor will look for a country where he or she can profit by expressing one's currency in the denomination of the host currency. The theories that explain how exchange rates are determined will help determine how exchange rates affect FDI in a country.

## **5.5 Policy Recommendations**

Exchange rates, infrastructural development and level of technology were the most significant macroeconomic factors that have an influence on foreign direct investment to Kenya. Due to these, the study made some policy recommendations as follows.

The Kenyan government should work to improve the investment climate, as openness and ease of doing business were discovered to be critical requirements for investments. In this regard, the government should strengthen institutional infrastructure and governance, as these are critical in attracting foreign investments.

A strong currency are important determinants of FDI inflows; thus, macroeconomic stability should be a government priority. The Central Bank of Kenya should make every effort to keep inflation and interest rates as low as possible while maintaining a strong currency.

The findings suggest that the impact of infrastructure on FDI is sensitive in Kenya, implying that infrastructure is important in attracting FDI inflows. The findings suggest that the government should work to modernize ports and airstrips, tarmac more kilometres of road, build more kilometres of rail line, and improve port infrastructure to attract FDI inflows.

The government must also enhance the quality of ICT goods and services, improve broadband Internet connectivity, expand technical training institutes, and capitalize on innovative ideas to increase ICT goods and services exports. This will enhance communication structure, attracting FDI inflows.

## **5.6 Limitations and Suggestions for Future Research**

This study was successfully undertaken but not without a few limitations. One such limitation was that the study was carried out in Kenya while there are other East

African Community member states. The study suggests a research work on more understandings of FDI inflows to countries of sub-Saharan Africa and investigate some of these key determinants and compare it with Kenya. Similar research to be conducted on EAC countries in doing this, so as to understand how FDI inflows is affecting the EAC countries.

The other limitation was the time period covered by the study which was from 1980-2020. This could be extended by other scholars to include the most recent years in order to capture the dynamics and influence of the Corona-Virus Disease of 2019 (COVID-19).

Finally, this study used Generalized Method of Moments while other scholars and researcher could use other models such as ARDL, VEC, Dynamic VAR and Engle and Granger causalities. This can bring out proper understanding of the long and short runs of FDI inflows.



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## **APPENDIX**

### **A. 1: Introduction Letter from School of Business & Economics, Moi University**



**MOI UNIVERSITY**  
**POSTGRADUATE OFFICE**  
**SCHOOL OF BUSINESS AND ECONOMICS**

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 0771336914  
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P.O. Box 3900  
 Eldoret.  
 Kenya

**RE: MU/SBE/PGR/ACD/21B**

**DATE: 6<sup>th</sup> October, 2021**

**TO WHOM IT MAY CONCERN:**

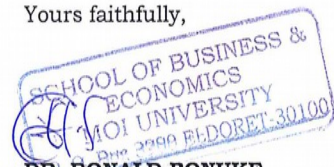
**RE: MATHEW KIPCHUMBBA LAGAT - SBE/PGE/006/16**

The above named is a bonafide student of Moi University, School of Business & Economics, undertaking **Masters in Economics** degree.

He has successfully completed coursework, defended his proposal, and is currently in the field collecting data for his research titled: "**Macroeconomics Determinants of Foreign Direct Investment in Kenya.**"

Any assistance accorded to him will be highly appreciated.

Yours faithfully,



**DR. RONALD BONUKE**  
**ASSOCIATE DEAN AND CHAIR-POSTGRADUATE STUDIES**

/pn

