

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI,
GHANA

EXAMINING THE INTERRELATIONSHIP BETWEEN EXCHANGE RATE, FOREIGN
DIRECT INVESTMENT AND ECONOMIC GROWTH AMONG SELECTED AFRICAN
COUNTRIES.

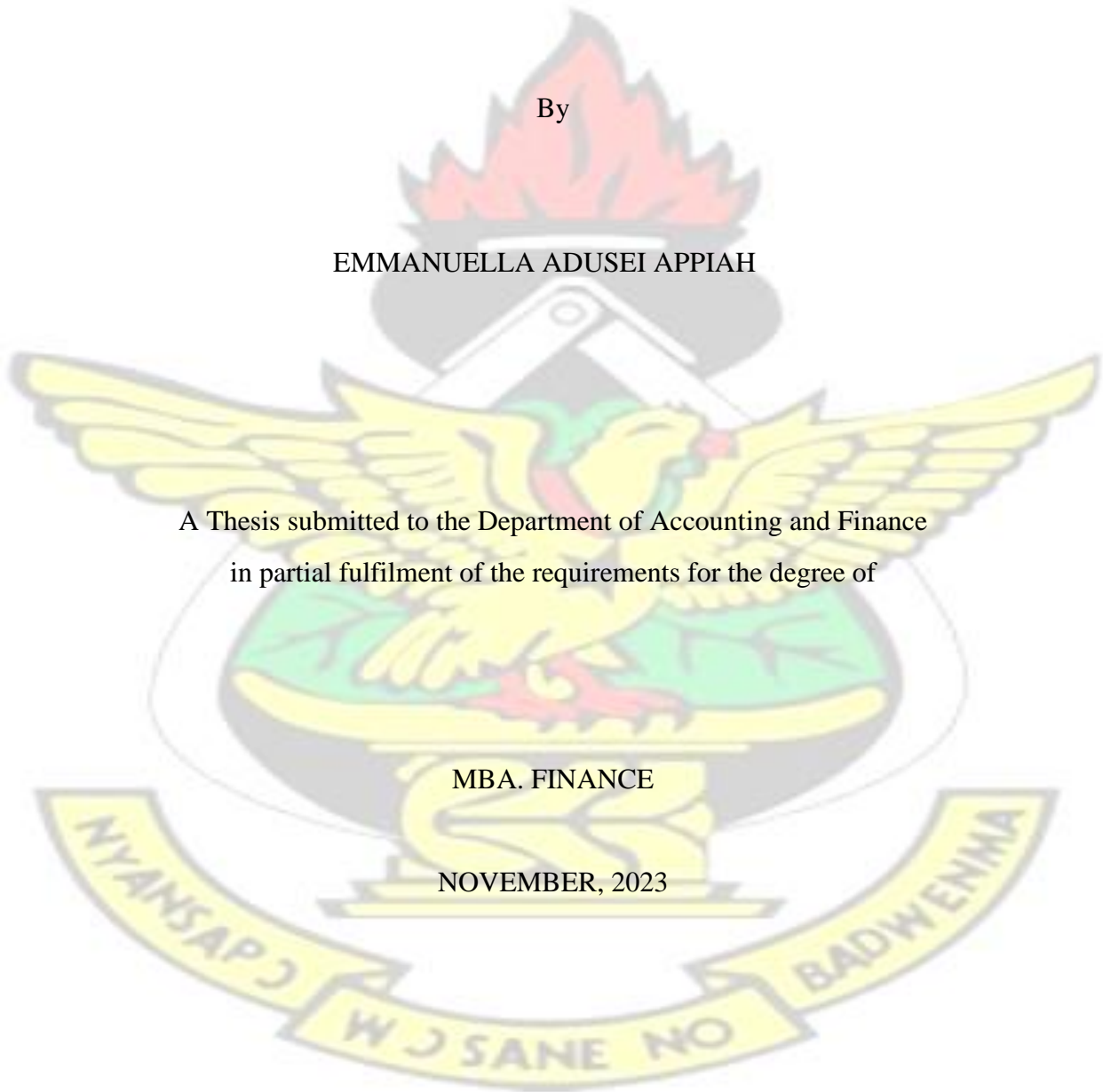
By

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A Thesis submitted to the Department of Accounting and Finance
in partial fulfilment of the requirements for the degree of

MBA. FINANCE

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DECLARATION

I hereby declare that this submission is my own work towards the award of the **MBA. In Finance** and that, to the best of my knowledge, it contains no material previously by another person or any material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

With much gratitude to the Almighty God, this work is dedicated to my Beloved Family, Mrs Christiana Adusei, Friends and all loved ones who supported and catered for me in diverse ways.



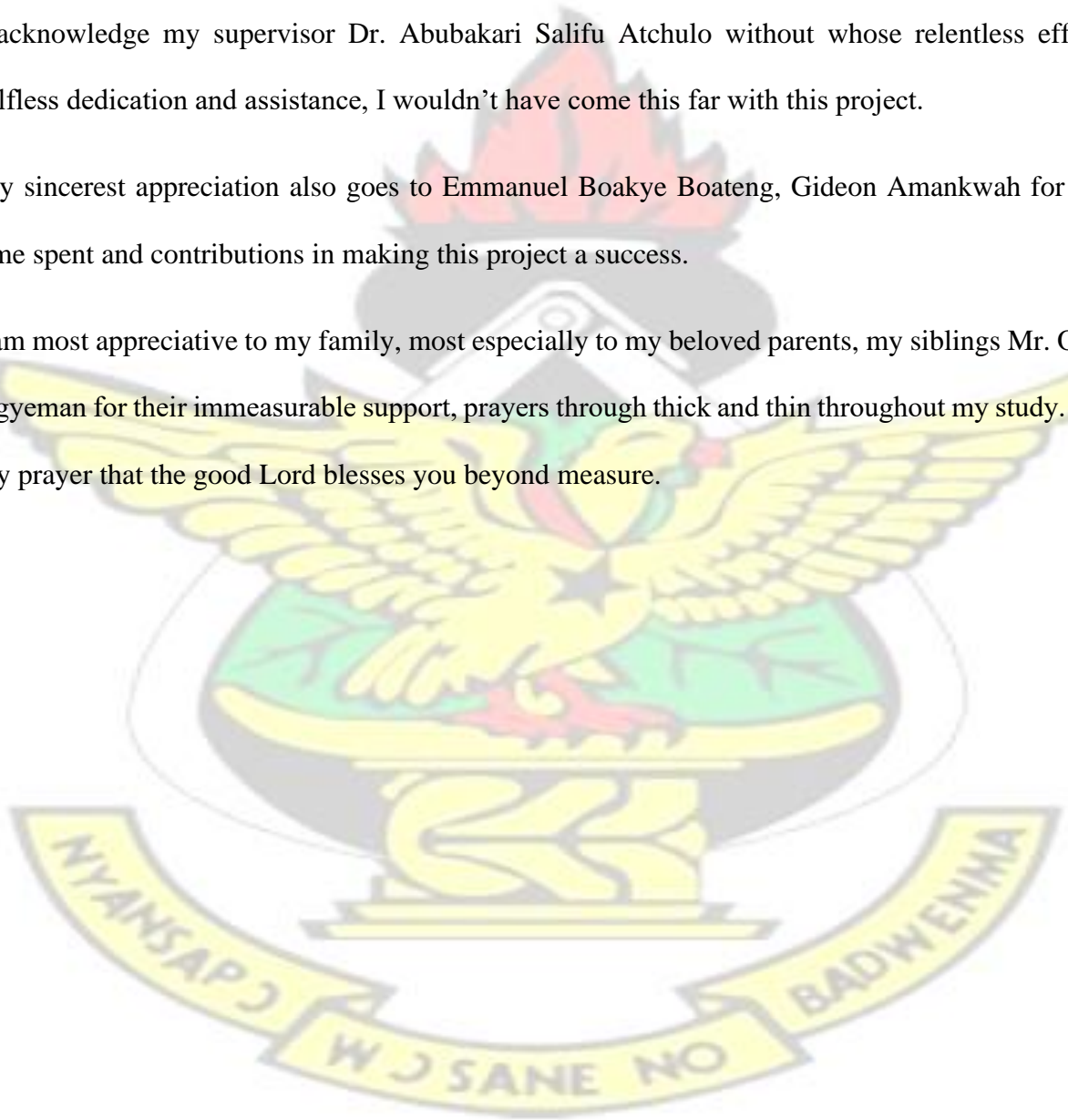
ACKNOWLEDGEMENT

Unless the Lord builds a house, those who build labour in vain. Unless the Lord watches over the city the watchman watches in vain. I am grateful to the Almighty God for his grace and mercy throughout this MBA. journey. Although it was not a “smooth sea”, Jesus Christ was always in the boat to steer affairs.

I acknowledge my supervisor Dr. Abubakari Salifu Atchulo without whose relentless effort, selfless dedication and assistance, I wouldn't have come this far with this project.

My sincerest appreciation also goes to Emmanuel Boakye Boateng, Gideon Amankwah for the time spent and contributions in making this project a success.

I am most appreciative to my family, most especially to my beloved parents, my siblings Mr. Osei Agyeman for their immeasurable support, prayers through thick and thin throughout my study. It's my prayer that the good Lord blesses you beyond measure.



ABSTRACT

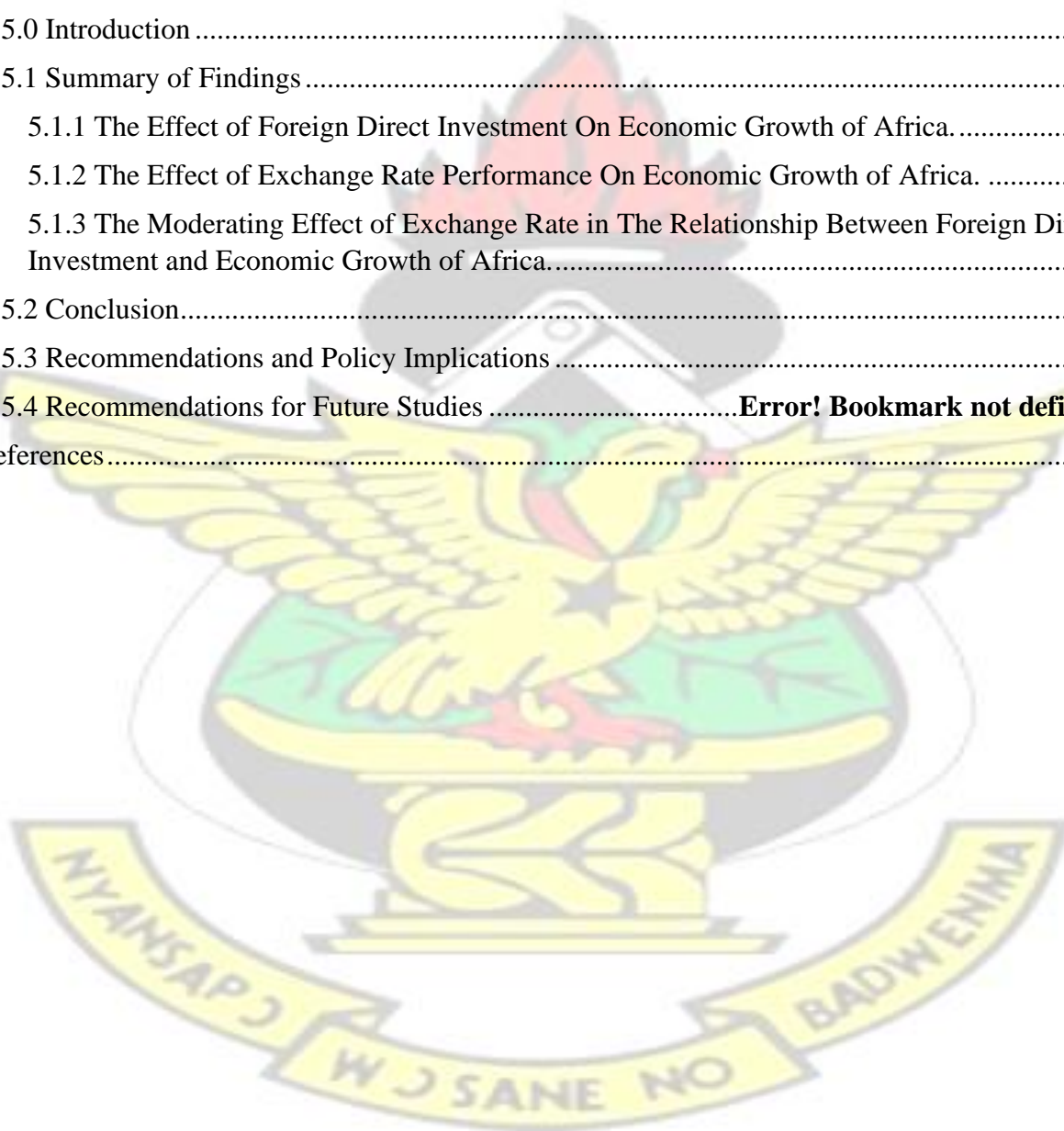
The overall objective of the study is to examine the interaction relationship between exchange rate, foreign direct investment and economic growth. To achieve the objective of the study, the quantitative research design was adopted in addition to the explanatory research method. The study used a sample of 20 African countries across a period of 22 years from 2000 to 2021. The study further used the random effect regression analysis to estimate the relationship between the variables in the study. Evidence from this research indicates that FDI inflows contribute positively and significantly to economic expansion. The research indicated that the performance of the exchange rate has a favorable and substantial influence on the expansion of the African economy. The study revealed that the exchange rate considerably and favorably moderates the connection between FDI and GDP growth in Africa. Based on the findings, the study among other factors recommended that governments should work to create an environment that is conducive to investment, which can help to attract FDI to the country. This could include measures such as simplifying business registration processes, reducing red tape, and improving infrastructure. The study also recommended that policy makers work to promote a stable exchange rate. A stable exchange rate can help to attract foreign direct investment (FDI) to the country, as it can make the country more attractive to foreign investors. Finally, it recommended for future studies to consider other robust estimation strategies such as the GMM estimations in order to ascertain if the findings of this study could be confirmed or rejected by their findings.

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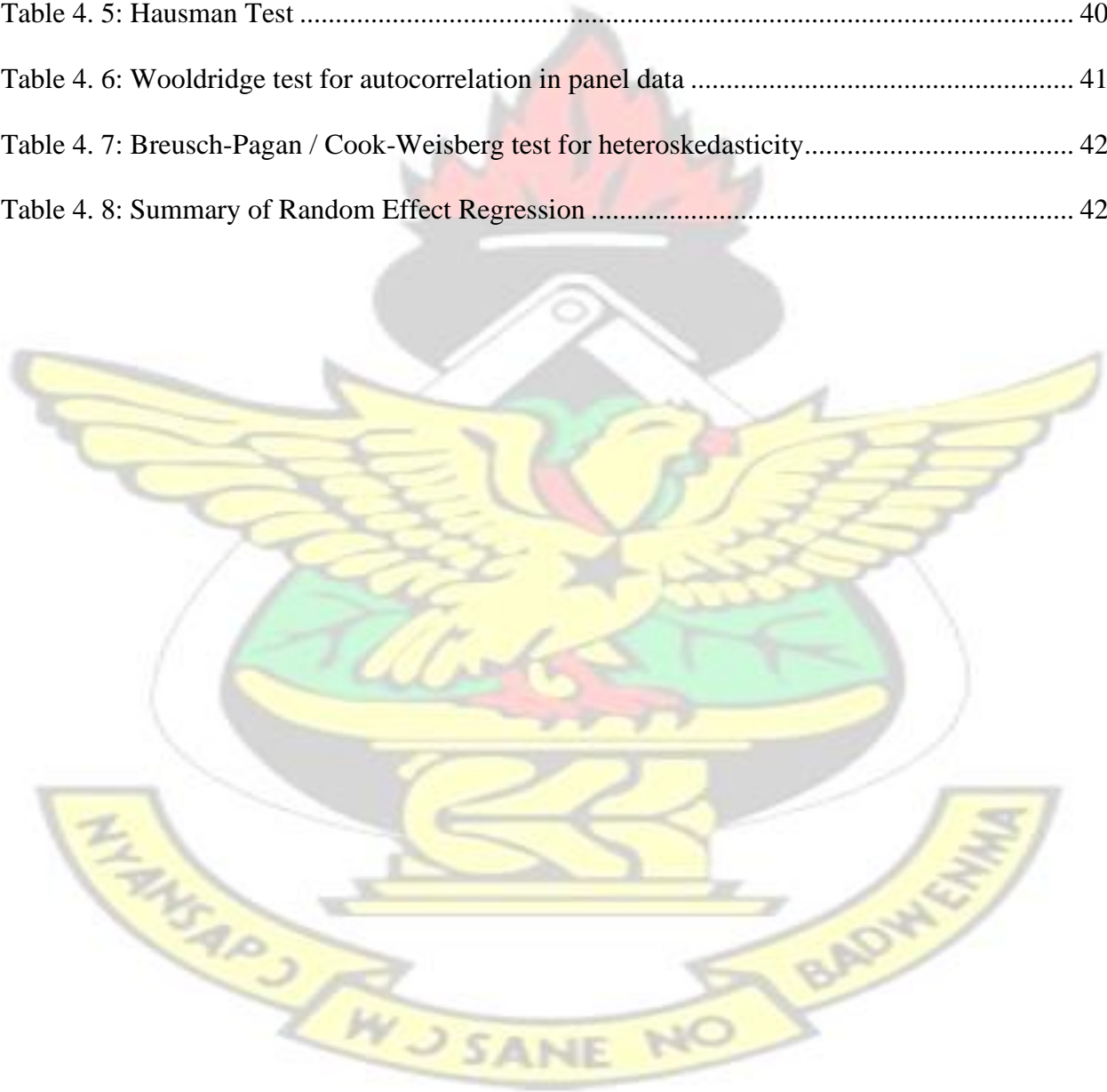
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CHAPTER ONE

INTRODUCTION

1.1 Background of The Study

Foreign direct inflows (here on FDI) have been emphasized in recent years as having numerous ramifications, including a good impact that minimizes technological disparities between hosts and foreign nations, total demand, and the entire host economy (Jude and Levieuge 2015; Combes et al. 2019). FDI boosts domestic wealth in a variety of ways, including increased capital stocks, entrepreneurship, managerial competencies, brands, and market access (Sharma, Roy, and Choudhury 2018). When it comes to initial capital, Jude and Levieuge (2015) believe that FDI may stand in for domestic finance. Many nations are working to solidify FDI as a cornerstone of their Economic Development Strategy (Asongu and Odhiambo, 2022) because of the positive effects it can have on future investment potential, the balance of payments, the ability to make up for cash shortages, and the opportunities it presents for higher wages and better working conditions. As a consequence, governments in industrialised nations supported FDI influxes in particular, contributing to a rise in the FDI proportion of overall capital flows (Adjasi et al., 2012).

This surge in cross-border investments prompted scholars to investigate the impact of FDI on the host economy. Although some experts have found beneficial links, other investigations have shown inconclusive findings (Sawalha, Elian, and Suliman, 2016; Evans, Frank, and Rebecca, 2017; Awad and Ragab, 2018; Hayat 2019; Ciobanu, 2021; Pavlovic et al., 2021). Other scholars have shown a negative link between FDI and economic growth (Rahman 2015), while a minority have discovered no major relationship (Jude and Levieuge, 2015; Gönel and Aksoy, 2016; Olagbaju and Akinlo, 2018). According to the Endogenous Growth Model, FDI spreads to

domestic companies, which can then be used to improve human resources and technologies, explaining the positive impact on growth and development (cite here). With this notion in mind, Tee et al. (2017) studied the relationship of FDI to Ghana's economic growth from 1980 to 2012. According to their findings, FDI is a significant contribution to Ghana's economic growth. This is supported by Opoku, Ibrahim, and Sare (2019), who used the general technique of movement to examine FDI's influence on economic growth in Africa (GMM). According to their findings, FDI promotes economic growth. Other researchers who identified a favourable relationship between the two factors share this viewpoint (Evans, Frank, and Rebecca, 2017; Awad and Ragab, 2018).

Some studies have shown that this association is detrimental. Researchers in Bangladesh found that foreign direct investment (FDI) had a negative impact on GDP growth in their research. Despite these findings, several experts have different interpretations. For instance, research by Jude and Levieuge (2015) suggests that FDI may not be very consequential in and of itself for promoting economic development. Olagbaju and Akinlo (2018) and Gönel and Aksoy (2016) back up this position with their own research showing no significant correlation between FDI and GDP expansion. According to some of these researchers' methodologies and assumptions (Jude and Levieuge, 2015; Rahman, 2015; Gönel and Aksoy, 2016; Evans, Frank, and Rebecca, 2017; Awad and Ragab, 2018; Olagbaju and Akinlo, 2018; Opoku, Ibrahim, and Sare, 2019; Ciobanu, 2021; Pavlovic et al., 2021), the mixed results are not surprising (2019). Rahman (2015) and Tee, Frank, and Johnson (2017) are two examples of researchers that have used time series statistics to examine the connection between FDI and economic growth. The negative is that it's more difficult to investigate potential explanations for necessary systemic changes. Researchers like Opoku, Ibrahim, and Sare (2019) use an endogenous growth model to explain the correlation between FDI

and economic expansion using improved time series analysis and panel data. As a consequence, they failed to account for other potential confounders of the link between FDI and economic development.

According to Iamsiraroj and Doucouliagos (2015), emerging countries generally seek to attract foreign investors by providing fresh and relatively unexplored markets, low-cost access to natural resources and labour, regional advantages, and direct and indirect benefits. Regardless, Chenaf-Nicet and Rougier (2016) discovered that a country's ability to attract FDI is based not only on economic activity, but also on exchange rate output effectiveness. This means that the host country's exchange rate efficiency may have a greater impact on the impact of FDI on economic growth. Despite these findings, Africa's rising economies, particularly those in West Africa, have received little attention. Several studies have focused on particular nations and other emerging economies. Using data from selected African nations, this thesis fills the hole by studying the moderating role of the exchange rate in the relationship between FDI and economic growth.

1.2 Problem Statement

It is common knowledge that African nations have received a negligible share of total foreign direct investment throughout the years. Africa's proportion of worldwide foreign direct investment (FDI) flows has decreased from 4.6% in the 1970s to 1.7% in the 1990s, before increasing to 3.3% in the late 2000s, demonstrating the continent's inability to attract FDI. However, Asia's percentage rose from 7.7% to 24.3% during the same time period (Seyoum, Wu, and Lin, 2015). Unfortunately, most of the studies done in Africa find a positive correlation between FDI and economic growth, making this trend all the more worrisome. Researchers have looked at this issue

before, assuming there is a direct link between FDI and economic growth (Sawalha, Elian, and Suliman, 2016; Evans, Frank, and Rebecca, 2017; Awad and Ragab, 2018; Ciobanu, 2021; Pavlovic et al., 2021). But other researchers have disputed this, saying that the association between the factors is really rather weak and statistically insignificant (Belloumi, 2014; Gupta and Singh, 2016).

Despite these findings, the growing economies of Africa have received less coverage. Due to the fact that many studies have isolated one or a small number of emerging economies for analysis. Few studies have been undertaken in Africa on how much FDI affects economic growth, and the findings have been contradictory (Insah, 2013; Owusu-Antwi, Antwi, and Poku 2013; Klobodu and Adams, 2016). Researchers like Chenaf-Nicet and Rougier (2016) showed that a country's capacity to attract FDI is contingent on more than just its economic activity; rather, an efficient exchange rate also improves FDI inflows and supports economic growth. "Since the performance of the exchange rate tends to effect investment value, it follows that the intensity of FDI inflows into a country may be impacted by its exchange rate stability relative to other global currencies." Thus, this research suggests that nations with strong exchange rates will attract greater FDI inflows than those with weak exchange rates, which might affect the rate to which FDI promotes economic growth. Since FDI inflows are important to economic growth, this thesis proposes that a combination of FDI and exchange rate performance would be even more beneficial. Foreign direct investment (FDI) can have both positive and negative effects on a country's currency exchange rate (Ha and Hoang 2020). Therefore, the purpose of this research is to analyse how the exchange rate affects the connection between FDI and GDP growth. The research is also aimed to make up for a dearth of literature on the topic of the impact of exchange rate on the FDI-growth nexus in Africa.

1.3 Research Objectives

The overall objective of the study is to “examine the interaction relationship between exchange rate, foreign direct investment and economic growth. In order to achieve this, the objectives below are outlined”:

1. To examine the effect of foreign direct investment on economic growth of Africa.
2. To analyze the effect of exchange rate performance on economic growth of Africa.
3. To examine the moderating effect of exchange rate in the relationship between foreign direct investment and economic growth of Africa.

1.4 Research Questions

In order to achieve the above objectives, the following research questions are asked:

1. What is the effect of foreign direct investment on economic growth of Africa?
2. What is the effect of exchange rate performance on economic growth of Africa?
3. What is the moderating effect of exchange rate in the relationship between foreign direct investment and economic growth of Africa?

1.5 Significance of the Study

The study's overarching goal is to analyse the dynamics between the currency exchange rate, FDI, and GDP expansion. For the first time, this research would provide credible FDI economic models to African policymakers. These results will aid a government in allocating resources effectively in order to improve exchange rate efficiency, economic growth, and foreign direct investment (FDI) inflows. Foreign direct investments, or FDI, are a major source of finance for several poor/developing countries, and hence are often seen as a potential method for supporting

underdeveloped nations. Therefore, this research will provide investors a cutting-edge framework for selecting emerging nations, whose economies may benefit from FDI. Finally, the study will contribute to the existing body of knowledge on the topic of exchange rates and their influence on the correlation between FDI and economic growth.

1.6 Overview of Methodology

The thesis would use a panel data approach and an explanatory analysis strategy. Since a larger number of degrees of freedom is associated with a more precise parameter estimation, the panel data approach was chosen. The analytical sample will be selected using a process of purposeful sampling. Participants would be recruited from all African nations, with a concentration on those for whom sufficient data is easily accessible. The study would look at information from 2000 through 2021. The accuracy of the anticipated regression model may be improved by using this observation to ensure more degrees of freedom. FDI net inflows as a percentage of GDP is the standard method for measuring the impact of foreign investment on a country's economy. The following serve as buffers: The domestic dollar exchange rate (EXR) will be used to gauge macroeconomic health, while the GDP growth rate of the host nation will quantify economic progress. To compile this information, we would scour databases maintained by Bloomberg and the World Bank's World Development Indicators Program. The Hausman test may be used to choose between fixed effects (FE) and random effects (RE) estimates for this kind of investigation under a broad range of random effects hypotheses.

1.7 Limitations and Scope of the Study

The study's overarching goal is to investigate the dynamics among currency valuation, FDI, and GDP expansion. The focus of this investigation is on Africa as a whole, but not on individual African nations. Since data from Bloomberg and the World Bank Database is publicly available only for the years 2000 to 2021, the research is limited to using data from those years even though a bigger data set might have affected the findings.

1.8 Organization of the Study

In all, there are five substantial sections to this study. The first chapter, titled "Introduction," lays out the rationale for the study, the topic to be investigated, the research goals and challenges, the report's significance, and the procedures that were followed to compile the data. Chapter 2 is a literature review. Here the researcher looks into the studies that support the thesis's hypotheses and the data collected by the investigation. Chapter 3 explains the methods used. Model definition for the analysis, as well as discussions of study design, survey, population, data, and data sources, are all part of the process. In the last section, we'll discuss how to analyse and evaluate the collected data. In this chapter, we present the study's data and analyse it using the various methods discussed in the preceding section. The conclusion draws conclusions and makes suggestions. The writer typically offers recommendations based on the study's findings, while the researcher sums up the whole report and makes conclusions based on the work's outcomes. The intended audiences for the recommendations are politicians, the economy, developers, and prospective research areas.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a review of related literature used for this study. In order to achieve the objectives of the study, this chapter is divided into three sections with each section focusing on a particular aspect of literature related to this study. Section 2.1 defines key concepts used in the study and provides further information about the concepts and variables for the study. Theories relevant to the study are provided in section 2.2, and the arguments leading to the use of these theories are also contained in that section. Finally, Section 2.3 provides empirical literatures that have been conducted in the study area and section 2.4 presents the conceptual framework for the study.

2.1 Conceptual Literature

2.1.1 The Concept of Foreign Direct Investment

Foreign direct investment (FDI) is defined by the OECD (2008) as "investments by firms established in one economy in the enterprises of another economy." The term "lasting interest" refers to a direct investor's continued involvement and influence within the administration of a direct investment company over an extended period of time. According to the Organization for Economic Cooperation and Development (2008) and the International Monetary Fund (2003), a link between a country and a company exists if a foreign investor holds more than 10% of the firm's voting power.

This is a commercial investment project that is funded by financial assets or production assets from outside the host country, as defined by the "Arab Investment and Export Credit Guarantee

Corporation (Arab Investment and Export Credit Guarantee Corporation, 1987). Foreign direct investment (FDI) is an investment made by a company based in one country (the direct investor) in a company based in another economy (the direct investment) with the intention of increasing the value of both companies. Foreign direct investment is characterized by the existence of long-term ties between the investor and the target business and the investor's ability to influence the board of directors.” Potential investors might range from individuals to groups to businesses to governments to international financial organizations. Direct investors might be anybody from an individual to a publicly traded company. If a foreign investor owns at least 10% of the voting power or shares in a company, it is considered a direct investment organization (Shernanna & El-Fergana, 2006).

2.1.1.1 Trend of FDI inflows in Africa

Since the 1980s, FDI into Africa has increased at rates never before witnessed. The average revenue gain for developing nations was \$20 billion between 1970 and 1979, while for Africa it was just \$1 billion to \$2.2 billion. During this time period, Africa had a decline in its proportion of FDI from 19.5% to 10.7%, lagging behind other developing nations. Over the same period, the share of FDI in total investment declined from 4.7% to 2.37 percent. But the story has evolved greatly since the '80s, especially in the '90s. There has been an increase in economic transparency and stability as a consequence of measures that have helped the private sector (Marandu et al., 2019). The World Bank said in 2012 that both the global demand for natural resources and the expansion of Africa's middle class had increased during the previous two decades.

Foreign direct investment (FDI) into Africa surged considerably throughout the 1990s, from US\$ 2.2 billion per year on average to US\$ 6.8 billion. Despite this, the proportion of the world's

population that lives in Africa has decreased by around half. In terms of population, it went from 2.4% to 1.74 %, and from 10.7% to 5.9% of the growing economies. The success story of the new century is the fivefold growth in remittances to Africa from 2000 to 2009, which totaled just over \$30 billion. As a result, FDI flows into developing economies throughout the globe have increased. SSA has achieved nearly as much success as itself as of this writing. Imports from Africa fell in 2013 and 2014 as a result of the increase seen in 2010 and 2011. The total fell from \$ 56.44 billion in 2012 to \$ 53.97 billion in 2013. The Ebola crisis in West Africa and political upheaval in Northern Africa (during the 2013 season), according to some commentators, are to blame for the drop in visitors (especially in 2014). Northern Africa's net inflows decreased from US\$17.15 billion in 2012 to US\$13.66 billion in 2013, and then from US\$13.66 billion in 2013 to US\$12.24 billion in 2014. (2014). Between 2013 and 2014, remittances to Western Africa fell by \$2.21 billion. Sub-Saharan Africa, however, showed a rise, from US\$ 42.00 billion (2013) to US\$ 42.95 billion (2014), despite a little decline for Africa as a whole. Middle (Central) Africa may have seen an uptick in remittances at this period (Loots and Kabundi, 2012).

Africa's economic performance during the preceding two decades is more crucial than ever, even though natural resources do have a vital effect on FDI influx. There might be a number of reasons for the uptick in FDI. African nations including “Sierra Leone, Niger, Cote d'Ivoire, Liberia, Ethiopia, Burkina Faso, Rwanda, Mozambique, Zambia, and Ghana are among those affected.” All of these countries have come a long way in a relatively short amount of time. Several challenges plagued Africa in the decades after the continent's independence. According to UNCTAD (1999), low FDI inflows over the course of a century were due to the continent's weak economic performance. The average growth rate of the world economy in the new millennium was higher than the average growth rate of the global economy in the 1980s and 1990s. From 2001 to

2010, Africa's economy expanded at a median annual rate of 5.29 percent, which was greater than the median growth rate of developing nations (5.83 percent) but lower than the worldwide median growth rate of 1.49 percent and the median growth rate of industrialized countries (2.62 percent). After the 5.15 percent growth rate in 2010, 2011's 0.96 percent growth rate was disappointing. In 2011, production fell to its lowest level since 1994. In 2012, the United States' economic growth rate of 5.05% was greater than the combined rates of both developed (1.07%) and developing (4.66%) nations. That works out to 2.18 percent. Growth rates in Africa decreased in 2013 and 2014, albeit they were still higher than the global average.

Foreign direct investment (FDI) “is crucial to globalization because it facilitates the exchange of ideas and the development of new skills. The concept of endogenous growth (Onyeiwu and Shrestha, 2004) draws attention to this role in several models. Given neoclassical ideas, FDI can only increase growth in the short run due to the fall in long-term capital returns. It has been established in a number of studies (Asheghian, 2004; Vu et al., 2006) that FDI is positively correlated with economic growth.” Foreign direct investment (FDI) has been argued by some academics to have just a little effect on GDP growth (Shah & Afridi, 2015).

2.1.2 The Concept of Exchange Rate

According to the definition provided by Azid et al. (2005), an exchange rate is the price of one currency in terms of another. This new viewpoint is made possible by a comparison of the value of the foreign currency to that of other currencies from other countries. “Depending on the direction of the conversion, the exchange rate may be seen as a multiplier, ratio, or conversion factor. Some people think that if exchange rates were allowed to fluctuate freely, they would become the most variable price in the economy, which would negatively impact both exports and

imports. When doing business inside the same nation, only domestic currency may be utilized. Cash, checks, or other payment methods are acceptable.” When doing business with partners in various time zones or nations, there are a few options for deciding on a common currency. Currency of the seller, currency of the buyer, and a third currency are all examples. When a transaction involves two nations using different currencies, the local currency is traded for the foreign currency in the foreign exchange market (Williamson, 2009).

2.1.2.1 Determinants of Exchange Rate Fluctuations

There are many applied studies have been made to determine the factors that significantly influence exchange rate.

Inflation: “The value of a country's currency declines when inflation rises, which is good news for foreign currencies but bad news for the native currency. If two nations both suffer inflation, the currency of the country with higher inflation will lose value relative to the currency of the country with lower inflation. Inflation (CPI) has a negative impact on the exchange rate, as shown by Menkhoff et al.'s (2013) analysis of the primary determinants of currency rate in 36 nations from 1900 to 2009. Money supply growth, nominal GDP growth, and interest rates were all shown to be positively correlated with the exchange rate.”

Balance of payments: “The demand for foreign exchange exceeds the supply of a country with a large negative international balance of payments or trade deficit, driving up the exchange rate and depreciating the currency. Bashir and Luqman (2014) looked at the actual exchange rate of Pakistan between 1972/73 and 2012/13 and how it was affected by a number of variables. There is a positive relationship between the real exchange rate and trade restrictions and worker remittances, and a negative relationship between the real exchange rate and terms of trade and

inflation. Bashir and Luqman (2014) analyzed the real exchange rate of Pakistan from 1972/73 to 2012/13, including the effects of a number of variables. This study reveals that a rise in prices and deterioration in trade conditions cause the real exchange rate to fall, whereas trade restrictions and remittances from expatriate employees cause it to rise.”

Interest rate: “When the interest rate in one nation rises, or when the domestic interest rate rises above the external exchange rate, capital flows into the country, increasing demand for the currency, which causes the external exchange rate to fall and the domestic currency to rise in value.”

Economic Growth: “Generally speaking, rapid economic expansion hurts the value of the domestic currency in the near term in the foreign exchange market but helps it in the long run. According to research by Mankhoff et al. (2013), who looked at the factors most influencing exchange rates in 36 nations from 1900 to 2009, inflation (CPI) had a negative effect on currency values. Money supply growth, nominal GDP growth, and interest rates were all shown to have a beneficial effect on the exchange rate.”

2.1.3 The Concept of Economic Growth

Accelerating global growth is a top economic aim for many national governments. Both developed and developing country authorities have been debating and discussing how to best boost their economies. Total output of goods and services is often used as a proxy for economic growth. The term "economic growth" has been variously defined by many specialists throughout the years. According to Demir and Razmi (2022), economic growth is the process through which a country's GDP rises, increasing customers' purchasing power and the availability of products and services. Narayan (2022) suggest an alternative definition of economic growth as the rate of increase in real

production or overtime income in a fully employed economy. Another definition of economic growth is the development of the economy characterized by full employment and stable pricing. Economic growth, as described by Johnson (2000), "explains the rate at which a country's economy is growing over time." Increases in GNP or GDP, after being properly adjusted statistically to exclude the often-misleading impacts of price inflation, are common measures of economic growth. Dornbusch et al. (1994) argue that long-term growth is the key to a flourishing economy. According to Samuelson et al. (2001), economic growth is defined as an increase in gross domestic product. A country's economy grows as its production capacity frontier expands. McConnell et al. (2002) argue that growth in an economy depends on two factors: efficiency and the interaction of supply and demand. According to Godwin (2007), economic expansion is characterized by a rise in real gross domestic product (GDP). "This is the real domestic product in the country, or GDP. Real national income, gross domestic product, and per capita income growth are all indicators of economic progress, as stated by Conteras (2007). Gross domestic product (GDP) is a measure of the value added by the domestic economy to its inputs, hence a rise in GDP indicates a rise in national income or revenue."

The phrase "economic growth" is used in the field of economics to describe a country's rising level of production over time. The value of a country's commodities and services rises as its economy develops. In the United States, this trend is often referred to as an increase in GDP. It's a simple measure of output that allows for comparisons to be made across nations and with historical norms.

2.1.3.1 Determinants of Economic Growth

In view of the definitions posited above, scholars have identified factors that affects the economic growth of countries. Mentioned below are these main microeconomic determinants of economic growth:

The classical school of thought holds that the quality of the land, air, water, soil, minerals, fuel, and economy are all necessary for development. A country's abundance of natural resources (measured by the percentage of GDP attributable to exports of basic items) may be detrimental to its economic growth in a few different ways. This is owing to the fact that nations with abundant natural resources often struggle to develop a manufacturing sector that can compete in international markets and against cheap imports from countries with weak currencies and a lack of incentive to innovate. Countries with an abundance of natural resources often engage in rent seeking and other forms of waste because they provide incentives for high levels of consumption and low levels of public investment. It is well acknowledged that a lack of resources is a major barrier to change. Finally, the secular decline in the global price of natural resources is harmful to development (Hanushek and Woessmann, 2020).

Zhang and Graham (2020) provide more insight into the potential benefits and drawbacks of natural resources to long-term economic growth. Many nations that profit from gold mining and export utilize the money to better the lives of their residents by investing in things like healthcare, schools, and infrastructure. Finally, a nation's natural resources don't play a significant role in propelling GDP growth. Japan, Singapore, Taiwan, and Hong Kong, some of the world's fastest-growing economies, lack access to the raw materials necessary to produce products in today's market. Russia, Brazil, Nigeria, Ghana, Venezuela, Saudi Arabia, etc., are resource-rich yet

develop more slowly than other nations. This unexpected result may be explained by the ease with which various types of natural resources may be transported across countries (Weil, 2005).

Population expansion, according to proponents of classical growth theory, is a key driver of economic development. If a country's population continues rising but its economic resources stay the same, the law of diminishing returns says that the country's real per capital productivity will begin to decline. Economists in the early 19th century blamed population growth for forecasts of economic stagnation and catastrophe. This realization was prompted by projections showing the world's population expanding rapidly. The Malthusian population theory, for instance, predicted that, as the world's population rose, real income would plummet until only the poor could afford to eat. Solow (1957) and Swan (1956), developing the first neoclassical growth models, used population growth as an exogenous rate to demonstrate that a higher growth rate in a country's population is related with a lower standard of living.

According Pomi et al. (2021), a rise in the birthrate will lead to a rise in total output, and this rise in total production will be followed by an even bigger rise in per capita production. When the rate of increase in both population and per-capita production levels off, the rate of increase in total output will be constant. If population growth slows, overall production will expand at a slower rate unless per capita GDP growth accelerates at an improbable rate.

Investment is widely acknowledged by both neoclassical and endogenous growth models as the primary engine underlying economic development. The neoclassical model merely accounts for the impacts of investment during the transition phase, while the endogenous growth models argue for larger long-term ramifications. The statements made by these theories are supported by a significant body of empirical research on the connection between investment and economic growth (Waheed et al., 2019). However, it should be noted that these results are speculative at best. “High

investment, however, is not always an indicator of brisk economic growth. It is possible that the quality and productivity of the investment itself, as well as the presence of appropriate legal, political, and social infrastructure (Artadi and Sala-i-Martin, 2003), all contribute to the effectiveness with which an investment is utilised. Since only elements that encourage high-quality investment (such as stable pricing and adequate incentives) can be anticipated to support growth, massive investment does not ensure quick, sustained development.”

Numerous “studies (Barro (2001) and Miller and Upadhyay (2000) have shown the importance of a highly educated populace to a prosperous economy.” A considerable body of literature, mostly based on the research of Roberto Barro (1991, 1997), demonstrates the importance of human capital to economic growth. Human capital must be preserved and expanded, according to Gemmell (1996). According to research by Benhabib and Spiegel (1994), higher levels of education are associated with faster rates of technological advancement. The challenge of assigning blame is entirely ignored by all of these works. Concerns raised by Bils and Klenow (2000) stem from the association between economic growth and the rising school enrollment rates shown between 1960 and 1990. They say it's impossible. It has been noted by Hall and Jones (1999) that "differences in physical capital and educational attainment explain just a minor portion of the difference in output per worker across nations" when looking at the factors that determine aggregate incomes as opposed to growth rates. Inadequate social infrastructure, especially poor rates of human capital production, are said to be effects, rather than causes, of these problems.

The growth of cutting-edge technology is a major factor in the way economies change through time. It might help make sustained economic growth feasible. Technological advancement brought about by the discovery of new ideas has been proved to be the primary motor of the global economic system by several researchers, including Romer (1986, 1990), Solow (1962), Lucas

(1988), and Grossman and Helpman (1991), among others. However, it's important to keep in mind that a country's ability to embrace innovations from other nations is fundamental to its growth. Weil (2005) contends that the distribution of technology and the dissemination of technological knowledge are two crucial factors in economic growth. The economic growth of a nation may be affected by the amount of foreign aid it receives. International help is a key driver of economic growth after peace has been restored (Ibrahim, et al., 2008). Whether or not growth assistance really produces economic growth is a topic of debate. Using data for 34 LDCs between 1955 and 1965, Papanek (1973) found that help significantly boosted growth. Look at (Gupta, 1975; Stoneman, 1975; Burnside & Dollar, 2000) for some citations. Aid impeded economic growth in 32 Latin American nations between 1957 and 1964, according to research by Griffin and Enos (1970). Following the data of (Voivodas, 1973).

2.2 Theories

2.2.1 Endogenous Growth Theory

The endogenous growth theory argues that financial markets are fundamental to economic development. Several academics, notably Levine (1997) and Cameron (1993), advocate for a bank-centered perspective on the financial system. “Long-term economic growth, as measured by the growth rate of production per person, is controlled by total factor productivity (TFP), which is in turn driven by the pace of technical innovation.” Solow and Swan's (1956) neoclassical growth hypothesis states that the pace of technological advancement is established by a scientific process that is independent of and unrelated to economic factors. The long-term growth rate of an economy may be given by causes outside of it, according to neoclassical economics.

Endogenous growth theory contests this neoclassical paradigm by outlining mechanisms via which economic considerations may affect technical progress and, by extension, economic development. Technological advancement is propelled by innovations, which take the form of new goods and services as well as emerging markets. A higher rate of process innovation may result from businesses gaining manufacturing expertise as the economy expands. “Monetary policies that influence trade, competition, education, taxation, and intellectual property may affect the pace of innovation by influencing the private costs and rewards of conducting R&D. This is because many breakthroughs are the product of R&D investment by for-profit enterprises. Pagano (1993) expands on the endogenous growth model to emphasize the importance of the financial sector in the path of economic development. Pagano uses a basic endogenous growth setup, i.e. Rebelo's AK model (1991). It is assumed that the manufacturing process needs just capital (K_t), and that the production function shows constant returns to scale.” Pagano's model also assumes that capital depreciates at a rate of δ and that there is no population increase, thus the capital creation function is expressed. It is also believed that a certain percentage of savings, the size of s , is lost during the process of financial intermediation.

This study uses this theory to explain how FDI can influence the growth the country. FDI often involves the transfer of technology, managerial skills, and knowledge from the foreign investor to the host country. This knowledge transfer can enhance the human capital of the host country's workforce, leading to a more skilled and productive labor force. Improved human capital contributes to higher productivity and, consequently, economic growth. FDI can generate positive externalities or spillover effects within the host country's economy. Through linkages with local

suppliers, competitors, and other economic agents, FDI can stimulate innovation and productivity improvements beyond the initial investment project.

2.3 Empirical Literature

Yimer (2023) investigates the growth effects of FDI in Africa for the period 1990–2016 using a dynamically common correlated effect approach for an error-correction model. It uses an analytical classification of African economies, with each being fragile, factor-driven or investment-driven. It also accounts for interaction effects and the problem of cross-sectional dependence that previous studies overlooked. While the long-run effect of FDI on growth is significantly positive in investment- and factor-driven economies, its short-run effect is insignificant in the latter type of economies. The effect of FDI on growth is insignificant in the fragile category both in the short-run and long-run, however.

Rao et al. (2023) also examine the interrelationship among foreign aid, foreign direct investment (FDI) and economic growth in South-East Asia (SEA) and South Asia (SA) during 1980–2016. The findings from alternative empirical estimations suggest that while foreign aid is negatively associated with FDI as well as growth, FDI positively influences growth. Further, governmental financial assistance to private sector for domestic investment turns out to be important in all empirical estimations insofar as positively associated with FDI flows as well as growth.

Bebetrix et al. (2023) revisits the link between FDI and economic growth in emerging and developing economies. Analysis of the early decades of the sample shows that there is no statistically significant correlation between FDI and growth for countries with average levels of education or financial depth. In line with previous contributions, this correlation is positive and statistically significant for countries with sufficiently well-developed financial sectors or high

levels of human capital. However, the findings also show that the link between FDI and growth varies over time. For more recent periods, there is a positive and statistically significant relationship between FDI and growth for the average country, with local conditions having a negative effect on this link. The paper also develops a novel instrument aimed at addressing the endogeneity of FDI inflows. Instrumental variable estimates suggest that the results are unlikely to be driven by endogeneity, and the results on the role of absorptive capacities may be due to the GVC revolution in the 1990s.

Ahmad et al. (2022) ascertain the impact of Chinese FDI on economic growth in Pakistan. This study documents the exploration of the determinants of economic growth in Pakistan by emphasizing the significant role played by Chinese FDI and investments in renewable energy in particular. This paper employs time series data analysis to examine the relationship between GDP and Chinese FDI, inflation, trade openness, exchange rates, interest rates, remittances, and renewable energy consumption from 1990 to 2019. The study involved performing the ARDL bounds test, and it was determined that the dependent and independent variables are linked in the long term. Furthermore, the error correction model is negative and noteworthy, which checks the long-run relationship between variables. According to the findings of the autoregressive distributed lag (ARDL) model, Chinese FDI has a substantial favorable effect on Pakistan's economic growth. Furthermore, renewable energy usage has a long-term favorable and significant association with Pakistan's economic growth. This study established that FDI, and particularly renewable energy, will stimulate the economic growth of Pakistan. Our research has substantial policy implications, especially when it comes to the relationship between FDI and renewable energy.

FDI and FPI (foreign direct investment and foreign portfolio investment) in established and emerging nations were analyzed by Sawalha, Elian, and Suliman (2016). To determine whether there might be any positive synergies from this flood, researchers looked into it. It was used in a cross-sectional time series growth regression for 21 industrialized and 19 developing nations from 1980 to 2012 to estimate the GMM estimators. Analysis revealed a mixed bag of results from the sample. Foreign Direct Investment (FDI), on the other hand, has a negative and considerable influence on growth in both samples. Economic growth is boosted by FDI inflows, according to a research cited in the report.

Hafiz et al. (2017) investigate the relationship between Pakistan's economic progress and foreign direct investment from 1980 to 2016. It's possible to use cointegration and the granger causality test with autoregressive distributed lag limits. Economic growth, FDI, commerce, physical capital, and human capital are all linked, according to the results of the ARDL limits test. According to the results, economic development, foreign direct investment (FDI), physical capital and international trade are all linked. The data also shows a one-way causality between human capital, labor force, and physical capital. In both sides, physical capital and FDI, and human capital both have a causal relationship that may be recognized as a two-way street.

A research by Olagbaju and Akinlo (2018) found that FDI had a significant impact on economic growth in 37 countries in Sub-Saharan Africa, and that financial development was a key factor in this growth (SSA). From 1989 to 2013, an imbalanced dataset was used to study the independent influence of FDI on economic development in sub-Saharan Africa. The relationship between FDI and financial development was shown to be significant. According to the study, FDI does not instantly contribute to economic development in sub-Saharan Africa. There are several benefits to this, including an increase in economic growth in the area.

According to Sirag et al. (2017), Sudanese economic growth is influenced by financial development and foreign direct investment (FDI). A issue of unit root and cointegration tests, with or without structural discontinuities, affects the majority of macroeconomic variables. The long-run model is estimated using modified ordinary least squares and dynamic ordinary least squares approaches. According to cointegration tests, there is a long-term link between the variables despite the structural discontinuity. Sudan's economic development has been helped greatly, according to the statistics, by financial development and foreign direct investment (FDI). Economic growth is more likely to be aided by the expansion of financial services rather than by attracting FDI. In addition, the figures show that FDI boosts financial growth, which benefits the economy. FDI inflows have a higher influence on economic growth than previously anticipated, according to this study.

Saudi Arabia's domestic investment and FDI, as well as economic progress, are examined by Balloumi and Alshehry (2018) using the ARDL limits test for cointegration. FMOLS, DOLS, and canonical cointegrating regressions are used to examine the long-term ARDL estimations (CCR). In the long run, bidirectional causality between FDI and domestic capital investment and FDI and non-oil GDP growth has been shown to be negative as well. The short-term impact of FDI on domestic capital investment is compensated by a long-term negative impact on FDI from domestic investment. Economic growth spurred by FDI, trade liberalization, and other forms of financial development includes non-oil GDP, as well as foreign direct investment (FDI).

A recent research by Asamoah and colleagues (2019) explores experimentally the role of institutions in the Sub-Saharan Africa-FDI-trade-growth nexus (SSA). An SEM approach was used to evaluate data from 34 nations in the Southern Hemisphere between 1996 and 2016. While FDI's effect on economic development is diminishing, growth without institutions continues to

increase. Research suggests that economic development is linked to greater openness to trade. A country's quality of institutions seems to have little effect on attracting foreign direct investment (FDI). Africa's economic growth is supported by the development of human capital, financial resources and natural resource rentals in Sub-Saharan Africa

In OECD nations with well-established governance institutions, Raza and colleagues (2019) identified a link between FDI and economic progress. There has been a lot of data collection since 1996. This research employs a fixed-effect model using the Generalized Method of Moments (GMM). The study's findings are closely linked to economic development. Also, economic development is positively influenced by interaction terms in the research. There is a one-way link established between anti-corruption measures, political stability, citizen participation, as well as government efficiency (GOE) and economic growth (REQ) according to the Granger causality test, while the test shows a bidirectional relationship between FDI and regulatory quality (VAC). A country's capacity to attract foreign direct investment (FDI) and build its economy is connected to the quality of its institutions, according to the conclusions of preceding sections.

FDI and economic development in South American nations are examined by Owusu-Nantwi (2019) and Erickson (2019). (2019). In addition, the research examines the impact of FDI on regional development. A cointegration test is used to examine the long-term link between FDI and South American economic development. A VECM is used to analyze the long-term connection and causal correlation between South American economic development and foreign direct investment (vector error correction model). For a South American panel of 10 nations, the Pedroni cointegration test demonstrates that FDI and long-term economic development are intertwined. According to the conclusions of this study, foreign direct investment has a strong beneficial influence on regional economic development over the long run. Economic development and

foreign investment are related in both directions, according to the VECM. This part is full of pessimistic and gravely misguided language. This shows that long-term equilibrium relationships between the variables are present.

At least 45 African nations from 1980 to 2016 were studied by Acquah and Ibrahim (2019) for their research on FDI, economic growth, and financial sector development. The results of the two-system generalized technique of moments reveal that FDI has a mixed influence on economic development, while larger levels of FDI are often linked with better growth. The model definition may determine the impact of FDI on economic growth. FDI's contribution to economic development may be slipping as a result of the banking industry's influence. According to this study, domestic credit's dampening impact may be measured no matter what financial sector or economic development gauge is employed.

While discussing economic development, Hayat (2019) emphasizes on the role of institutional quality on FDI (FDI). International investment, as well as the quality of government institutions, have a direct influence on economic growth. The capacity of an organization to grow is directly and indirectly impacted by the quality of its institutions. Inflows of foreign direct investment (FDI) and high-quality institutions are shown to have a favorable impact on economic development in this paper. Low and middle-income nations were the only ones to benefit from FDI-driven growth. These nations' FDI-driven economic development was shown to be positively influenced by the quality of their institutions. Foreign direct investment (FDI) has been shown to have a negative impact on high-income economies, according to this study.

FDI, economic development, energy consumption, human capital, and biocapacity are examined by Halliru et al. (2020) in an effort to better understand the impact of these factors on carbon emissions in selected West African countries between 1970 and 2017. Estimators of long-term

cointegration have demonstrated that predicted CO2 emissions follow a U- or N-shaped pattern. According to panel quantile estimations, N-shaped only happened in countries with high carbon emissions, and not in countries with moderate or low emissions. The EKC hypothesis is supported by data showing an inverted U-shaped link between growth and CO2 emissions in ECOWAS nations. According to the panel's quantile causality findings, FDI, biocapacity, energy consumption, and human capital all have a role in carbon emissions.

2.4 Conceptual Framework

The framework below is used to illustrate the relationship between the variables:

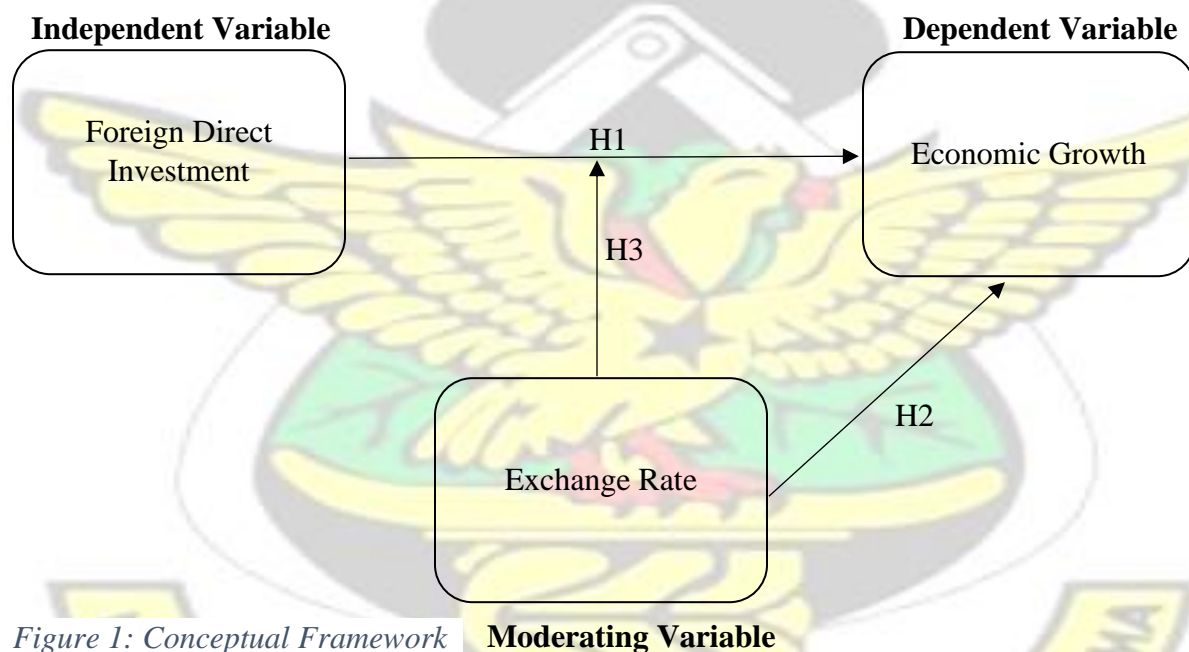


Figure 1: Conceptual Framework

2.4.1 FDI and Economic Growth

Foreign Direct Investment (FDI) “is seen as a significant catalyst for productivity gains by introducing new systems and know-how, managerial skills, employee training and access to international markets while looking for solutions to improve economic growth in developing

countries. Endogenous growth theory supports the idea of an FDI spillover multiplier mechanism for domestic businesses, which will have positive effects on aggregate production and economic growth (Jude and Levieuge, 2015).” Despite the inconsistency in researchers' findings on this subject, as noted in Chapter 1.1, there is evidence that most of these studies have had a positive impact on economic growth from FDI (Sawalha, Elian and Suliman, 2016; Tee, Frank and Johnson, 2017; Awad and Ragab, 2018; Hayat, 2019; Opoku, Ibrahim and Sare, 2019). Following these researches and based on the theory of endogenous development, this research argues that, first of all, FDI is a capital flow, it also complements local investment in most developing economies in a context of liquidity constraints. It can therefore be argued that the spillover effect of FDI brings technological, and capital needed to inform productivity, which subsequently impacts economic growth. On the basis of the fore-going arguments, this study therefore hypothesises that:

H1: There is a significant relationship between FDI and economic growth.

2.4.2 Exchange Rate and Economic Growth

There is a range of empirical research in the literature that looks at the connection between the exchange rate and economic growth. The consequences of devaluation on the Fijian economy between 1970 and 2000 were studied by Narayan et al. (2008). Using the co-integration technique, they determined that a devaluation had a multiplicative impact on the amount of production both immediately and over time. In particular, it was shown that a 10% devaluation resulted in a 3.3% rise in production. Tarawalie (2020) used the Johansen cointegration method to offer empirical estimates for the connection between the real exchange rate and economic growth in Sierra Leone from 1999Q1 to 2006Q4. The findings suggested that a higher real exchange rate was associated

with faster GDP growth. “In particular, the growth in Sierra Leone's production was boosted by a depreciation of the real exchange rate. This article presents the findings of an investigation on the relationship between the Italian currency's exchange rate and economic growth conducted by Di Nino et al. (2013). They looked at data from 1861 to 2011 and came to the conclusion that there is a positive correlation between undervaluation and economic growth. Undervaluation, the authors observed, boosted growth by boosting exports, particularly from industries with high productivity. Particularly his 2012 study, Chen zeroed in on how the exchange rate affects economic growth and how growth rates in different Chinese regions are beginning to converge. Using dynamic panel data estimates, a data set was examined covering the years 1992-2008 across 28 states. According to his research, the improved provincial economies were a direct result of the higher real exchange rate. With the use of three-stage least square approaches, Aman et al. (2017) looked at the connection between Pakistan's exchange rate and economic growth from 1976 to 2010. The research demonstrated that a favourable exchange rate contributes to economic growth by boosting exports and industries that can replace imported goods. Since 1970, Obansa et al. (2013) have studied how the exchange rate has affected Nigeria's GDP growth. The findings suggested a favourable correlation between the exchange rate and economic growth. Thus, they found evidence that economic growth is significantly associated with real exchange rate depreciation.” The study therefore hypothesis that:

H2: Exchange rate appreciation has a positive and significant effect on economic growth

2.4.3 Moderating Role of Exchange Rate

Many economists argue that a country's ability to benefit economically from foreign direct investment (FDI) depends on characteristics like the sophistication of its financial system, since

this facilitates the spread of new technologies that often accompany FDI investments (Hermes and Lensink, 2003). Researchers like Chenaf-Nicet and Rougier (2016) showed that a country's capacity to attract FDI is contingent on more than just its economic activity; rather, an efficient exchange rate also improves FDI inflows and supports economic growth. Given that the performance of a nation's exchange rate against other major currencies tends to alter the value of the investment when due, it follows that the intensity with which a country attracts FDI inflows might be affected by the performance of its exchange rate. Therefore, the research concludes that the degree to which FDI influences economic growth is influenced by the degree to which countries with better performing exchange rates attract more FDI inflows than countries with poor exchange rate performance. Since FDI inflows are important to economic growth, this thesis proposes that a combination of FDI and exchange rate performance would be even more beneficial. Foreign direct investment (FDI) may have both positive and negative effects on the exchange's rate. The study therefore hypothesises that:

H3: Exchange rate significantly moderates the positive relationship between FDI and economic growth.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter of the study discusses the research methodology used for this study. The chapter covers the methods and instruments used in achieving the objectives of the research. It gives details about the research design, population, sampling techniques, research instruments, data collection method used, and data analysis method

3.1 Research Philosophy

This inquiry is grounded on a positivist ontological and epistemological standpoint. The ontological perspective addresses the nature of reality and, in the positivist view, asserts that reality is objective, external to the observer, and can be understood through empirical observation. In other words, it assumes that there is a single, objective reality that can be measured and observed by different researchers in similar ways. From an epistemological standpoint, which deals with the nature of knowledge and how it can be obtained, the positivist approach emphasizes empirical evidence derived from systematic observation and experimentation. Positivists believe that knowledge can be obtained through direct sensory experience and that scientific methods, such as experiments and statistical analyses, provide the most reliable means of acquiring knowledge. Positivists insist on the formulation of testable theories, emphasizing a worldview where reality is considered context-free and amenable to functional analysis through objective methods such as standardized measurements.

The hallmarks of positivist research include adherence to the scientific process, statistical analysis, and the formulation of oversimplified generalizations. Additionally, positivist investigations often

employ methodologies like control and experimental groups with a pre-test and post-test design. The choice of the positivist paradigm for this study is intentional, as it aligns with a quantitative research design that seeks to test hypotheses rigorously to derive empirical findings. However, it is essential to note that while adopting a positivist stance, this study recognizes the limitations of this approach, such as potential oversimplification of complex social phenomena and the exclusion of subjective experiences. The acknowledgement of these limitations contributes to a nuanced understanding of the research methodology, balancing the advantages of a positivist approach with an awareness of its inherent constraints.

3.2 Research Design

According to Saunders et al. (2010), research design is critical because it helps in making research efficient, in addition to yielding of utmost information with minimal outlay on effort, time and money by aiding the smooth execution of several research operations. Saunders et al. (2010) further indicate that research design assists researchers to accomplish their research objectives by serving as a guide in relation to approaches, philosophies, strategies and techniques for obtaining answers or examining relationship between variables of interest. “Research according to Newman (2012) is carried out to achieve three aims. These are the exploration of a new topic, description of a social phenomenon or an explanation of why something occurs. Explanatory research design is employed for the study. Saunders et al. (2010) indicates that explanatory research establishes the causal relationship between variables through hypothesis testing.” Therefore, the justification for explanatory research design is because the study is a causal study which seeks to examine the association between FDI, exchange rate and economic growth.

3.3 Population of the Study

Population is defined as "any complete set from which a sample is drawn for statistical analysis" by Saunders et al. (2012). In this context, "target population" refers to the whole group of persons about whom information is being gathered. To effectively plan a research, you must first determine the size and location of your target sample group. The population for this study are all African countries. In all, a total of 54 countries are in Africa and these form the study's population.

3.4 Sample Size and Sample Selection Technique

To assist answer research questions, a certain group of people is chosen to serve as a sample. This indicates that the sample represents a tiny fraction of the whole population that was studied. The sample for this study was 20 African countries selected using the convenience sampling which enables the researcher to use data on countries which are readily available on the world bank database.

3.5 Data Collection

The main source of data was the secondary data used for this study. "This data was annual data spanning from 2009 to 2020. In order to ensure that the data for this study was credible, the data were sourced from the world bank database which provides these data on every country in the world. Foreign direct investment will be measured as net inflow FDI as a percentage of GDP. The moderating variables: Exchange Rate (EXR) is measured using the home dollar exchange rate as a measure of macroeconomic stability while economic growth is measured using the GDP growth rate of the host country."

3.6 Model Specification

The data is “analysed using Stata v15 and the multiple regression analysis is used (fixed or random-effect depending on the Hausman Test Results). The general specification of the model which we estimate can be written as follows”:

$$Y (GDP)_{it} = \beta_0 + \beta_1 (FDI)_{it} + \beta_2 (Inf.)_{it} + \beta_3 (Imp.)_{it} + \varepsilon_{it} \dots\dots\dots \text{Model 1}$$

$$Y (GDP)_{it} = \beta_0 + \beta_1 (EXR)_{it} + \beta_2 (Inf.)_{it} + \beta_3 (Imp.)_{it} + \varepsilon_{it} \dots\dots\dots \text{Model 2}$$

$$Y (GDP)_{it} = \beta_0 + \beta_1 (FDI)_{it} + \beta_2 (Inf.)_{it} + \beta_3 (Imp.)_{it} + \beta_4 (FDI \times EXR)_{it} + \varepsilon_{it} \dots\dots\dots \text{Model 3}$$

3.7 Description of Variables

Foreign Direct Investment: “The statistics for FDI came from the World Bank's website, and it is shown below as a percentage of GDP for Net Inflows of FDI.”

Economic Growth: “Economic activity includes all aspects of a society's production, distribution, and consumption of products and services. One indicator of economic growth is the gross domestic product (GDP). The research quantifies economic expansion by tracking the country's GDP growth rate.”

Exchange Rate: “In this context, the term "exchange rate" refers to the value of one currency in terms of another. The value of a country's currency in relation to the US dollar is the exchange rate.”

Inflation: “The Consumer Price Index (CPI) measures inflation by tracking the average annual percentage increase or decrease in the retail price of a constant or changing basket of goods and services purchased by consumers. In this experiment, this serves as a kind of "control" variable.”

Import and Export: All purchases and sales of products and services between domestic buyers and sellers, as well as sales of nonmonetary gold to domestic buyers, are considered to be part of a country's imports and exports. Information from the World Bank's online database was used for the measurement. This factor serves as a control in the analysis as well.

3.8 Data Analysis/Estimation Strategy

We verify the stability of our standard errors in light of the panel regression analysis. Using Stata's robust regression feature is unnecessary if our standard errors are resilient. We can check whether this is the case by looking for signs of hetero- or homoskedasis in our data. There is no need to employ robust standard errors in our regression if our sample is homoskedastic, meaning the variance in the error component is constant. If our data is heteroscedastic, on the other hand, we must utilize robust standard errors to avoid producing biased conclusions. Breusch-Pagan and Cook-Weisberg tests for heteroscedasticity are used for this purpose. The study will do a Hausman Test to see if the fixed effect (FE) regression model is the most appropriate compared to a random effects (RE) model. To do that we test whether or not there is covariance between the independent variables and the error term. If the test proves that there is no covariance between the error term and the independent variable, then a RE model would be appropriate. If the opposite is true, then FE would be appropriate.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter of the study presents the data analysis and subsequently its discussions of the findings from the analysis of the data. Furthermore, the chapter presents the preliminary tests conducted before the use of the data for the analysis process. The chapter is important towards understanding how the data explains the research objectives outlined in the earlier chapter of the study.

4.1 Descriptive Statistics

The descriptive statistics on the variables are presented in this section of the study and in Table 4.1 below:

Table 4. 1: Descriptive Statistics on Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Economic Growth	264	4.569628	3.598267	-14.89468	15.32916
FDI Inflows	252	3.879768	5.157589	-1.508552	39.45622
Exchange Rate	252	0.1160913	0.2435185	0.0002683	1.835135
Inflation Rate	253	7.971298	5.994342	-1.106863	41.5095
Trade	260	66.93333	26.72375	20.72252	129.7787
Population	264	2.252123	0.8003024	0.0022912	3.755687

Source: Field Study, 2022

4.1.1 Descriptive Statistics on Economic Growth

From the analysis above, it can be observed that economic growth measured using GDP growth rate recorded a minimum of -14.89 and a maximum of 15.32 percent respectively. The mean GDP growth rate was observed to be 4.56 percent. This implies that on the average, the African countries in this study has 4.56 percent GDP growth annually.

4.1.2 Descriptive Statistics on FDI Inflows

With respect to the next variable FDI inflows, the analysis showed a minimum FDI inflows to GDP rate of -1.50 and a maximum of 39.45 percent. The mean FDI inflows to GDP growth was recorded as 3.87 indicating that on the average, the FDI inflows into Africa was 3.8 percent of their GDP rate.

4.1.3 Descriptive Statistics on Exchange Rate

With exchange rate, it was measured as the ratio of dollars to the home currency rate. From the analysis, it was evident that the worse performing currency was 0.0002 with the best being 1.83 dollars to 1 home currency. The mean exchange rate was 0.116 which implies that on the average, the exchange rate in Africa is \$0.116 per home currency.

4.1.4 Descriptive Statistics on Inflation Rate

For inflation, the analysis showed a minimum of -1.10 and a maximum of 41.50 percent within the period of study. The mean inflation rate was 7.97 percent. This implies that on the average, the inflation rate in African for consumer prices index was 7.97 percent within the period of study.

4.1.5 Descriptive Statistics on Trade

For trade, the analysis showed that a minimum trade of 20.72 was recorded and a maximum of 129.77 within the period of study. The mean trade was 66.93 which implies that on the average, trade into Africa was 66.93 within the period of study.

4.1.6 Descriptive Statistics on Population Growth

For population growth rate, the minimum recorded was 0.002 percent while the maximum was 3.75 percent. The mean population growth rate was 2.25 percent indicating that on the average, the population growth rate of African countries was 2.25 percent over the period of study.

4.2 Preliminary or Diagnostics Tests

Before using the panel data for this study, some preliminary tests need to be conducted in order to ensure that the data is reliable to use and also to ensure that the estimation is the best linear unbiased estimation. The preliminary or diagnostics test conducted to this regard are presented in this section of the study.

4.2.1 Unit Root Test

Panel unit root tests allow for the detection of non-stationary variables. The main advantage of using panel unit root tests is that they are more likely to reject alternative hypotheses with exceptionally persistent deviations from equilibrium, in contrast to the restricted power of the classic time-series unit root tests in finite samples. The results of this study were analyzed using

the Levin-Lin-Chu unit-root test. The study revealed that there was no significant difference between any of the variables, thus we could go on to the data analysis.

Table 4. 2: Panel Unit Root Test

Variable	Statistics	P-Value	Conclusion
Economic Growth	-1.9274	0.0270	Panels are stationary
FDI Inflows	-3.3012	0.0005	Panels are stationary
Exchange Rate	-3.8937	0.0000	Panels are stationary
Inflation Rate	-9.9965	0.0000	Panels are stationary
Trade	-14.4780	0.0000	Panels are stationary
Population	-10.3391	0.0000	Panels are stationary

Source: Field Study, 2022

4.2 Correlation Analysis

Relationships between measures or groupings of metrics may be meaningfully revealed via correlation analysis. Even if the data originate from various sectors of the organization, information about those relationships might give fresh insights and indicate interdependencies. high correlation or perfect correlation among the variables in the study could produce unreliable estimation. The correlation in this study is conducted using the Pearson Correlation Metrix and from the analysis, it can be observed that there exists no perfect correlation between the explanatory variables.

Table 4. 3: Correlation Analysis

Variables	FDI	Ex.Rate	Inf.	Trade	Pop.
FDI	1.0000				
Ex.Rate	0.0341	1.0000			
Inf.	0.0457	0.5564	1.0000		
Trade	0.3268	0.2831	0.0340	1.0000	
Pop.	0.702	0.0029	0.2427	-0.5656	1.0000

Source: Field Study, 2022

4.2.3 Multicollinearity

Using the Variance Inflation Factor (VIF) test, we verified whether the magnitude of the correlation between the variables may lead to multicollinearity issues in the model. The VIF test threshold is set as 10 by Wang and Luo (2020); hence, a VIF of 10 indicates multicollinearity. From the analysis presented in Table 4.4, the VIF test results reveals the mean VIF and individual VIF in the study were all less than the threshold and hence the presence of multicollinearity could be ruled out.

Table 4. 4: VIF Test of Multicollieanrity

Model	Variables	VIF	1/VIF
Model 1	FDI	1.44	0.696320
	Inf.	1.13	0.883268
	Trade	2.15	0.465388
	Pop.	2.10	0.477321
	Mean VIF	1.70	
Model 2	Ex.Rate	1.61	0.619934
	Inf.	1.58	0.632042
	Trade	1.67	0.598802
	Pop.	1.64	0.610851

	Mean VIF	1.63	
Model 3	FDI	1.74	0.575396
	Ex.Rate	3.59	0.278888
	(FDI*Ex.Rate)	2.99	0.334990
	Inf.	1.59	0.630863
	Trade	2.42	0.413556
	Pop.	Mean VIF	2.41
	Mean VIF	2.41	

Source: Field Study, 2022

4.2.4 Hausman Test

The Hausman Test (or Hausman specification test) is a statistical method for identifying endogenous regressors (predictor variables) in a regression analysis. To decide between the fixed effect and the random effect regression models, the test is used. The null hypothesis is the random effect while the alternative hypothesis is the fixed effect model. From the analysis, it was evident that there was overwhelming evidence in favor of the null hypothesis and hence it was concluded that the model is consistent under the random effect model.

Table 4. 5: Hausman Test

Model	Statistics	P-Value	Remarks
Model 1	3.57	0.4681	Random Effect
Model 2	3.08	0.5448	Random Effect
Model 3	5.80	0.4465	Random Effect

Source: Field Study, 2022

4.2.5 Auto/Serial Correlation

The correlation between one variable and its own lag at different times is known as serial correlation. It assesses how historical values of a variable affect its present value. For the reason that linear panel data models suffer from biasing standard errors due to serial correlation, making the conclusions less accurate. Serial correlation was analyzed using the Wooldridge test for autocorrelation in panel data. The analysis showed the presence of first order autocorrelation and hence this was corrected using the robust standard errors in the estimation since it helps to remove serial or auto correlation.

Table 4. 6: Wooldridge test for autocorrelation in panel data

Model	Statistics	P-Value	Remarks
Model 1	18.751	0.0012	first-order autocorrelated
Model 2	18.779	0.0012	first-order autocorrelated
Model 3	17.671	0.0015	first-order autocorrelated

Source: Field Study, 2022

4.2.6 Heteroscedasticity

In panel data analysis, testing for heteroskedasticity is an essential procedure and central issue. The existence of heteroscedasticity in the model was tested using the Breusch-Pagan / Cook-Weisberg test. The research confirmed the existence of heteroscedasticity, showing that the model did not have constant variances. This was corrected using the robust standard errors in the estimation since it helps to correct heteroscedasticity problems.

Table 4. 7: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Model	Statistics	P-Value	Remarks
Model 1	18.66	0.0000	Heteroscedastic
Model 2	15.68	0.0001	Heteroscedastic
Model 3	18.64	0.0000	Heteroscedastic

Source: Field Study, 2022

4.3 Data Analysis

The results from the analysis of the data used in this study are presented in the Table 4.8 below. The table contains results for all three objectives obtained using the random effect regression analysis.

Table 4. 8: Summary of Random Effect Regression

Variables/Models	Objective 1	Objective 2	Objective 3
FDI	0.1743483** (2.14)		0.1314049** (2.03)
Ex.Rate		1.91044*** (2.75)	-0.6044821 (-1.20)
(FDI*Ex.Rate)			0.7184102*** (3.85)
Inf.	-0.0521404 (-1.55)	-0.041216 (-1.15)	-0.0570275 (-1.64)
Trade	0.0604046* (1.82)	0.0705288** (2.09)	0.0538284 (1.52)
Pop.	1.265207*** (4.48)	1.26081*** (4.04)	1.88078*** (3.98)
Constant	1.741847**	1.552489*	1.644063**

	(2.26)	(1.83)	(2.11)
Overall R²	0.1240	0.1240	0.1544
No. Obs	231	231	231
Wald Chi²	52.37	46.32	111.46

Source: Field Study, 2022

4.3.1 Foreign Direct Investment and Economic Growth

From the analysis, it is evident from the objective 1 table that the model had a constant of 1.74 which was found to be significant at .05 level ($t=2.26$). This implies that holding all other variables constant, economic growth is expected to increase by 1.74 units. With respect to the independent variable, FDI, a coefficient of 0.17 was recorded and found to be significant at .05 level ($t=2.14$). This indicates that FDI inflows has a positive and significant influence on economic growth and specifically, a unit increase in FDI inflows would be expected to result in a 0.17 unit increase in economic growth. The study controls for inflation, trade and population growth, with inflation, a coefficient of -0.052 was recorded and found to be insignificant indicating that inflation has no significant effect on economic growth in this model.

Also, trade recorded a coefficient of 0.060 which was also found to be insignificant at .05 level ($t=1.82$) further showing that trade in this model also had no significant influence on economic growth. Population growth however, recorded a coefficient of 1.26 which was significant at .05 level ($t=4.48$). This indicates that population growth has a positive and significant effect on economic growth and a unit increase in population growth would be expected to result in a 1.26 unit increase in economic growth. The model showed an overall r-squared of 0.1240 which implies that overall, the model can explain up to 12.40 percent of the changes in economic growth.

4.3.2 Exchange Rate Performance and Economic Growth

The second section of the analysis, covers the effect of exchange rate on economic growth, it is evident from the objective 2 table that the model had a constant of 1.55 which was found to be significant at .05 level. This implies that holding all other variables constant, economic growth is expected to increase by 1.55 units. With respect to the independent variable, exchange rate, a coefficient of 1.91 was recorded and found to be significant at .05 level ($t=2.75$). This indicates that exchange rate has a positive and significant influence on economic growth and specifically, a unit increase in exchange rate would be expected to result in a 1.91 unit increase in economic growth. With inflation, a coefficient of -0.04 was recorded and found to be insignificant indicating that inflation has no significant effect on economic growth in this model.

Also, trade recorded a coefficient of 0.070 which was also found to be significant at .05 level ($t=2.09$) showing that trade in this model had a positive and significant influence on economic growth. Population growth also, recorded a coefficient of 1.26 which was significant at .05 level ($t=4.04$). This indicates that population growth has a positive and significant effect on economic growth and a unit increase in population growth would be expected to result in a 4.04 unit increase in economic growth. The model showed an overall r-squared of 0.1240 which implies that overall, the model can explain up to 12.40 percent of the changes in economic growth.

4.3.3 Moderating Effect of Exchange Rate in Foreign Direct Investment and Economic Growth

From the analysis, it is evident from the objective 3 table that the model had a constant of 1.64 which was found to be significant at .05 level ($t=2.11$). This implies that holding all other variables constant, economic growth is expected to increase by 1.64 units. With respect to the independent

variables, FDI, a coefficient of 0.13 was recorded and found to be significant at .05 level ($t=2.03$). This indicates that FDI inflows has a positive and significant influence on economic growth and specifically, a unit increase in FDI inflows would be expected to result in a 0.13 unit increase in economic growth. Also, exchange rate in this model had a coefficient of -0.60 but however found to be insignificant at .05 (-1.20) which showed that exchange rate had no significant effect on economic growth in this model. The key variable in this model was the interaction term between FDI and exchange rate, with this interaction variable, a coefficient of 0.718 was recorded and found to be significant at .05 level ($t=3.85$). This implies that exchange rate positively and significantly moderates the relationship between FDI inflows and economic growth.

The study controls for inflation, trade and population growth, with inflation, a coefficient of -0.05 was recorded and found to be insignificant indicating that inflation has no significant effect on economic growth in this model. Also, trade recorded a coefficient of 0.05 which was also found to be insignificant at .05 level ($t=1.52$) further showing that trade in this model also had no significant influence on economic growth. Population growth however, recorded a coefficient of 1.88 which was significant at .05 level ($t=3.98$). This indicates that population growth has a positive and significant effect on economic growth and a unit increase in population growth would be expected to result in a 1.88 unit increase in economic growth. The model showed an overall r-squared of 0.1544 which implies that overall, the model can explain up to 15.44 percent of the changes in economic growth.

4.4 Discussion of Findings

4.4.1 The Effect of Foreign Direct Investment On Economic Growth of Africa.

The first objective was to examine the effect of foreign direct investment inflows on economic growth of Africa. From the analysis the study found that foreign direct investment inflows (FDI) has a positive and significant influence on economic growth. If FDI inflows have a positive effect on economic growth in Africa, it means that the influx of foreign investment is contributing to the overall growth and development of the African economy. There are several ways this may occur. Foreign direct investment (FDI) has the potential to boost production and efficiency in the host nation by introducing cutting-edge technology, information, and experience (Hayat, 2019). Foreign direct investment (FDI) has the potential to improve local economies by generating new employment and increasing demand for domestic products and services. In nations where local capital is limited or the domestic business climate is not favourable to investment, FDI may be a particularly important source of finance for economic growth in Africa (Acquah and Ibrahim, 2019). This result is similar with the results of Halliru et al. (2020), who demonstrated that FDI contributes to boosting economic development.

4.4.2 The Effect of Exchange Rate Performance On Economic Growth of Africa.

The second goal was to analyze how changes in exchange rates affected Africa's economic development. The research indicated that the performance of the exchange rate has a favorable and substantial influence on the expansion of the African economy. The positive impact of exchange rate performance on economic development in Africa indicates that the currency of the African nation is appreciating in value in relation to other currencies. A higher exchange rate may help the African country's exports compete more favorably on global markets. A higher exchange rate

reduces the cost of importing goods and services from outside, which may boost exports and spur economic expansion. This agrees with the results of Tarawalie (2020), who also found that the performance of the exchange rate positively influenced economic expansion.

4.4.3 The Moderating Effect of Exchange Rate in The Relationship Between Foreign Direct Investment and Economic Growth of Africa.

The third goal looks at how the exchange rate affects the correlation between FDI and GDP growth. The study revealed that the exchange rate considerably and favorably moderates the connection between FDI and GDP growth in Africa. This indicates that the exchange rate has the potential to enhance the beneficial association between FDI and economic development. A higher exchange rate may make a country's exports more competitive on the global market, which may raise demand for such items and drive economic development (Aman et al., 2017). Foreign investors may be more enticed to put money into a nation with a better exchange rate if they feel their investments will be worth more in their home currency as a result of the currency's gain. This may also contribute to a flourishing economy. The findings confirm Chenaf-Nicet and Rougier (2016) who showed that a country's capacity to attract FDI is contingent on more than just its economic activity; rather, an efficient exchange rate also improves FDI inflows and supports economic growth.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter of the study presents the summary of the findings of this research, the conclusions that can be made from it and also some recommendations for both policy makers and also for future studies into this area of research.

5.1 Summary of Findings

5.1.1 The Effect of Foreign Direct Investment On Economic Growth of Africa.

The initial goal was to research the impact that FDI has on the development of the African economy. Evidence from this research indicates that FDI inflows contribute positively and significantly to economic expansion. If foreign direct investment (FDI) inflows boost economic growth in Africa, then FDI is helping the continent's economy expand and thrive. There are several ways this may occur. Foreign direct investment (FDI) has the potential to boost production and efficiency in the host nation by introducing cutting-edge technology, information, and experience. Foreign direct investment (FDI) has the potential to improve local economies by generating new employment and increasing demand for domestic products and services. In nations where local capital is limited or the domestic business climate is not favourable to investment, FDI may be a particularly important source of finance for economic growth in Africa.

5.1.2 The Effect of Exchange Rate Performance On Economic Growth of Africa.

The second goal was to analyze how changes in exchange rates affected Africa's economic development. The research indicated that the performance of the exchange rate has a favorable and

substantial influence on the expansion of the African economy. The positive impact of exchange rate performance on economic development in Africa indicates that the currency of the African nation is appreciating in value in relation to other currencies. A higher exchange rate may help the African country's exports compete more favorably on global markets. A higher exchange rate reduces the cost of importing goods and services from outside, which may boost exports and spur economic expansion.

5.1.3 The Moderating Effect of Exchange Rate in The Relationship Between Foreign Direct Investment and Economic Growth of Africa.

The third goal looks at how the exchange rate affects the relationship between FDI and GDP growth. The study revealed that the exchange rate considerably and favorably moderates the connection between FDI and GDP growth in Africa. This indicates that the exchange rate has the potential to enhance the beneficial association between FDI and economic development. A higher exchange rate may make a country's exports more competitive on the global market, which may raise demand for such items and drive economic development. Foreign investors may be more enticed to put money into a nation with a better exchange rate if they feel their investments will be worth more in their home currency as a result of the currency's gain.

5.2 Conclusion

The overall objective of the study is to examine the interaction relationship between exchange rate, foreign direct investment and economic growth. To achieve the objective of the study, the quantitative research design was adopted in addition to the explanatory research method. The study used a sample of 20 African countries across a period of 22 years from 2000 to 2021. The study

further used the random effect regression analysis to estimate the relationship between the variables in the study. From the analysis and findings obtained, it can be concluded that the inflows of foreign direct investment and exchange rate performances in Africa can help to boost their economic growth. Furthermore, by maintaining good performing exchange rate, African countries can attract more foreign investors due to the potential of making benefits from a good performing exchange rate which can subsequently lead to improving economic growth in Africa.

5.3 Recommendations and Policy Implications

Recommendations for Industry or Practice:

Based on the findings of the study, the following recommendations for industry or practice are outlined:

1. The study found that FDI inflows positively influence economic growth. Therefore, it is recommended that businesses and industries work to create an environment that is conducive to investment, aiming to attract FDI. Measures such as simplifying business registration processes, reducing red tape, and improving infrastructure can enhance the attractiveness of the country for foreign investors.
2. The study also found that exchange rate performance promotes economic growth in Africa. As a result, businesses and industries can consider strategies to manage exchange rate performance that aligns with the country's economic benefit. This might involve interventions in the foreign exchange market or the use of capital controls to manage capital flows.
3. Moreover, since the study identified that a stable exchange rate positively moderates the relationship between FDI inflows and growth, businesses and industries are recommended

to support policies that promote a stable exchange rate. A stable exchange rate can make the country more attractive to foreign investors.

Recommendations for Research or Academia:

1. For future research, it is recommended to explore other robust estimation strategies, such as GMM estimations, in addition to the random effect estimation strategy used in this study. This can help to confirm or challenge the findings of this study, contributing to a more comprehensive understanding of the topic.
2. Additionally, the study suggests that future research should aim for a larger sample size and a more extended observation period. Gathering data across a broader range of countries and over an extended time frame could further validate the accuracy of the findings of this study.

Recommendations for Policy:

1. Governments are recommended to create an environment conducive to investment to attract FDI. This involves measures such as simplifying business registration processes, reducing red tape, and improving infrastructure. Governments can also promote the country's strengths and investment opportunities through marketing campaigns, trade missions, and other outreach efforts.
2. Considering the positive impact of exchange rate performance on economic growth, governments are advised to implement policies to manage exchange rate performance beneficially. This might include interventions in the foreign exchange market or the use of capital controls to manage capital flows.
3. Given that a stable exchange rate positively moderates the relationship between FDI inflows and growth, policymakers are encouraged to implement measures that promote

exchange rate stability. A stable exchange rate can enhance the country's attractiveness to foreign investors, contributing to economic growth.

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