

**RELATIONSHIP BETWEEN MACROECONOMIC FACTORS AND FOREIGN
DIRECT INVESTMENT IN EAST AFRICAN COMMUNITY**

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UNIVERSITY**

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DECLARATION

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

Signature:



Date:

20/11/2023

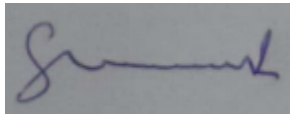
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DEDICATION

I dedicate this research project to my wife, Purity Nzilani, and parents, Joshua Wambua and Juliet Wambua.

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ABBREVIATIONS AND ACRONYMS

ASEAN:	Association of Southeast Asian Nations
CFA:	Control Function Approach
IV:	Instrumental Variable
KRA:	Kenya Revenue Authority
MNEs:	Multinational Enterprises
OLI:	Ownership Location Internalization
OLS:	Ordinary Least Squares
SEZ:	Special Economic Zones
WDI:	World Bank Development Index

OPERATIONAL DEFINITION OF TERMS

- Exchange rate:** A measurement that indicates how much one currency is worth in relation to another.
- FDI:** Cross-border investment is when a company or individual from one nation makes an investment in a company or interests located in another one.
- GDP:** The total value of all final goods and services produced inside the borders of a nation within a given time period, as determined by adding up the gross value added of all domestic producers for that time period, plus any applicable product taxes, less any rebates that aren't factored into the price of those goods.
- Infrastructural Development:** Refers to the level of growth in transport facilities, information, and communication facilities, and energy facilities in a country, expressed as infrastructural development expenditure as percent of GDP.
- Resource endowment:** The Resource Endowment is a measure of the relative abundance or scarcity of natural resources in a country or region, estimated as the ratio of a country's richness in natural resources to the population of that country.
- Trade openness** Calculated by dividing the value of a country's total exports and imports by its GDP, this indicator describes the focus of a country's economy on international trade.
- Inflation:** Changes in prices of goods and services throughout the country's economy.

ABSTRACT

Foreign direct investments (FDI) are key for the growth of a nation's economy, since it transfers money, technology, and knowledge to the receiving nation. Governments of many countries actively seek FDI to promote economic growth and development and may offer incentives. FDI has resulted from globalization through the integration of local or domestic markets with international markets across the globe. However, the inflows of FDI into the East African Community (EAC) remain low compared to other regions. Therefore, the goal of this research was to examine how macroeconomic factors (exchange rate and GDP) affect FDI in EAC countries, through infrastructural development, trade openness, inflation, resource endowment, ease of doing business as control factors. The study sought to address two specific objectives; to examine the effect of exchange rate on FDI in the East African Community; and to establish if there is an endogeneity of exchange rate and GDP with respect to foreign direct investment in the East African Community. The target population included Burundi, Kenya, Rwanda, Tanzania, Uganda, and DRC. However, South Sudan, one of the EAC countries, was excluded from the study because it had not been reporting its data to the World Development Index. The study used non-experimental research design, and theories such as eclectic paradigm, Keynesian, and Classical to support study variables. The study used published annual data from 2000 to 2021 to estimate Pooled Panel Ordinary Least Square (OLS) to answer the first objective and estimated Instrumental Variable (IV) method and Control Function Approach (CFA) to address the second objective. Diagnostic tests, namely normality test, multicollinearity, and heteroscedasticity were conducted. The study found that several factors, such as GDP, infrastructural development, trade openness, resource endowment, and Foreign direct investment (FDI) in the East African Community depends on how easy it is to do business there, whereas the exchange rate was a drag on FDI. Additionally, the results revealed that there was an endogeneity of exchange rate and GDP with respect to FDI in the EAC. The research suggests that policymakers in the EAC need to prioritize improving economic growth in the region by promoting policies that stimulate economic development. EAC countries can foster an environment favourable for business growth by reducing regulatory burdens, promoting transparency, and enhancing the region's ease of doing business generally. Moreover, policymakers in EAC countries should work to stabilize the exchange rate by adopting policies that promote macroeconomic stability. Further research is suggested to be conducted in other regions to compare the results obtained from this study with those obtained from other regions.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Foreign direct investment (FDI) is money put up by a company or person in one nation to support a business in another. The economic prosperity and development of many nations are significantly influenced by FDI which exponentially started increasing early 1960s and 1980s for developed and developing countries respectively (Naseemullah et al., 2022). This has led to governments of many countries actively seeking FDI to promote economic growth and development and may offer incentives (OECD, 2018). FDI has resulted from globalization through the integration of local or domestic markets with international markets (Cole, Elliott & Zhang, 2017). FDI is stimulated by favourable economic environment which influences the local and foreign investors (Kariuki, 2015).

Countries like the United Kingdom, United States, China, Netherlands, Luxembourg, Singapore, and Hong Kong among others have been listed as the leading recipients of FDI across the world in 2020 (Kostecka-Tomaszewska & Krukowska, 2020). Countries in Europe such as Germany and the United Kingdom depicted significant increase in FDI which also posted strong economic growth. Likewise, China reported both inward and outward increases in direct investment across the globe. Key drivers influencing FDI include; low tax jurisdictions, favourable business environments and regulations, robust infrastructure, political stability, skilled labour forces, market size and access, technological advancements, tax incentives, and strategic geographic locations (Sasana & Fathoni, 2019; Eissa & Elgammal, 2020; Jaiblai & Shenai, 2019; Dagnachew, 2017). Additionally, factors such as economic growth prospects, financial stability, innovation capabilities, and government policies influenced FDI in Netherlands, Luxembourg, Singapore, and Hong Kong among others (Kostecka-Tomaszewska & Krukowska, 2020).

A country's currency strength or weakness, such as the United Kingdom and the United States, is also intertwined with FDI flows, impacting the overall economic performance (Krishnaveni et al., 2023). Degong et al. (2020) noted that, China with its rapidly growing economy, is a major recipient of FDI, and the subsequent impact on its exchange rates and GDP is substantial. Similarly, the smaller but economically significant countries like Netherlands, Luxembourg, Singapore, and Hong Kong are characterized by intricate relationships between exchange rates, GDP, and FDI due to their roles as financial hubs and attractive investment destinations as per Wójcik et al. (2022). Analysing the endogeneity of these factors provides insights into the complex dynamics that shape foreign investment patterns in these countries.

However, due to the favourable economic environment, many international investors choose to expand their investments outside their own countries. For instance, Japanese automobiles have built an assembly in Mexico, and Italian software has opened a sales office in Kenya as depicted by Rao (2021). This has seen the creation of job opportunities for citizens in the host country, transfer of technology and knowledge, enhanced productivity, and fostered innovation. FDI promotes international trade and integration, facilitates the transfer of managerial skills, and strengthens supply chains in host countries such as China. According to Jaiblai and Shenai (2019), FDI has helped to create jobs and improve the standard of living in the recipient countries. However, FDI can also have negative impacts, such as contributing to income inequality and cultural homogenization.

In Africa, FDI has also been considered impactful on the long-term economic progress and prospects of the majority of growing African states, specifically EAC countries (OECD, 2018). The EAC has been actively working to attract FDI to promote economic growth, industrialization, and regional integration. FDI inflows into the EAC contribute to job creation, technology transfer, knowledge sharing, and expansion of essential industries and facilities, including production, agriculture, power, and service provision. FDI also stimulates exports,

enhances productivity, and encourages innovation and entrepreneurship within the region. Subsequently, EAC countries have implemented policies and initiatives to improve the investment climate, protect investors' rights, and provide incentives for foreign investors. The promotion of FDI in the EAC is aimed at boosting economic development, improving living standards, and fostering regional cooperation and integration (UNCTAD, 2020).

Despite the EAC attempts to attract FDI, the inflows into East African countries remain low compared to other regions from 2017 to 2020 (Ogbonna et al., 2022). The EAC is dedicated to expanding its economy, consistent with findings from the UN Conference on Trade and Development (UNCTAD). For example, FDI inflows to the EAC were only \$1.8 billion in 2019, representing 2 percent of total FDI inflows to Africa (UNCTAD, 2022). More so, UNCTAD reports that EAC received an estimated \$3.6 billion in FDI in 2018, which represents 3.5 percent of total FDI flows to Africa, which is however significantly lower than the FDI received by other regions such as North Africa, which received an estimated \$11.5 billion in FDI in 2018 (UNCTAD, 2018). In addition, FDI as a percent of GDP in EAC has been below the optimal (World Bank, 2021). This has posed the need to find a lasting solution for the researcher to enable EAC partner states to enjoy more favourable mutual benefits.

1.1.1 Macroeconomic Factors

Macroeconomic factors (interest rates, GDP, exchange rates, e.t.c.) are economic variables that have a profound impact on the overall health and stability of an economy (Chang, Meo, Syed & Abro, 2019). For instance, GDP measures the total economic activity within a country (Meftah & Nassour, 2019). It represents the different categories of economic activity that contribute the total value of domestic output in terms of services and products produced within a country (Ouyang, Song, Zheng, et al., 2020). The GDP components include consumption, which encompasses household spending on goods and services; investment, which refers to business spending on capital goods and residential investment; government spending, which

represents expenditure by the government on public goods and services; and the gap between exports and imports, known as "net exports." The mentioned components are combined to calculate GDP and offer a full analysis of a nation's economic health and performance, although, the GDP variable has been criticized for providing simplified measures of complex economic phenomena by Gräbner, Heimberger, Kapeller, et al. (2021).

In contrast, as illustrated by Juraev and G'Ofurjon (2020), inflation indicates the general escalation of the cost of goods and services throughout duration. It affects the purchasing power of consumers, production costs, and interest rates, among other factors. The components cost-push and demand-pull inflation are the two main types of inflation. Demand-pull inflation takes place when there is an abnormally high demand for products and services relative to their supply, leading to price increases. According to Alpago (2021), cost-push inflation takes place when a rise in production expenses, such as labour or raw material prices, leads to higher prices for consumers.

On the other hand, according to George, Xie, and Alba (2021), real interest rates set by central banks determine the cost of borrowing money and influence investment decisions and consumer spending patterns. The real interest rate reflects the compensation lenders receive for deferring consumption and the risk associated with lending. It is influenced by factors such as the supply and demand for savings and investments, productivity, and economic growth prospects. The inflation premium accounts for the expected rate of inflation and serves as compensation to lenders for the erosion of purchasing power over time. Ferretti (2021) identified other factors that may impact lending interest rates which include central bank policies, market conditions, risk assessments, and the level of creditworthiness of borrowers. Understanding these components helps individuals, businesses, and policymakers make informed decisions regarding borrowing, investing, and monetary policy adjustments.

Finally, a currency's worth in terms of another is determined by the present exchange rate and affect international trade, competitiveness, and the flow of capital across countries (Sasana & Fathoni, 2019). Its components include the base currency and the counter currency, which determine the exchange ratio between the two currencies. Changes in these components result in fluctuations in the exchange rate. Additionally, foreign exchange market supply and demand, driven by factors like economic output, inflation, political stability, and interest rates, have a significant impact on exchange rates. Central banks and governments can also influence exchange rates through monetary policies and interventions at the international currency exchange. Understanding the components of exchange rates helps in analyzing the competitiveness of a country's exports, the cost of imports, and the attractiveness of investing in different currencies (Mugisha, Shukla, Mulyungi, et al., 2018).

Whilst other macroeconomic factors are important, GDP and exchange rates are often considered more prominent due to their broad implications for economic growth, employment, investment, trade, and overall economic stability. They are a great indicator of an economy's productivity and ability to compete and are used as key insights for policy formulation, business decisions, and assessing the attractiveness of investment opportunities. GDP and the exchange rate are closely interrelated, keenly monitored by decision-makers, businesses, investors, and analysts to assess the state of the economy, make informed decisions, and anticipate potential economic trends and challenges (Irakoze & Yu, 2020). The interaction and dynamics of these factors shape economic growth, employment levels, inflationary pressures, investment patterns, and the overall standard of living within a country. Essentially, understanding and managing GDP and exchange rates promote sustainable economic development, fostering business opportunities, and ensuring the well-being of individuals and communities.

1.1.2 Determinants of Foreign Direct Investment

There are variety of determinants of FDI (Wickramarachchi, 2019). Resource endowment refers to the natural resources and other assets owned by a country, such as land, minerals, and labour. According to Wickramarachchi (2019), countries with abundant resources may be more enticing to international financiers because the resources can be used to produce goods and services for export or to support domestic production. Additionally, countries with a well-educated workforce and good infrastructure are attractive to overseas funders. Investors tend to prefer investing in countries with stable economies and political systems.

Moreover, as noted by Malesev and Cherry (2021), larger markets tend to attract more investment due to the potential for increased sales and growth. Lower labour costs can make a country more attractive to investors as it can result in lower production costs. A country with well-developed infrastructure, such as transportation and communication networks, can make it easier for investors to conduct business. A country with good access to regional markets can attract investors looking to tap into those markets (Soumaré et al., 2021). More so, government policies, such as tax incentives and investment promotion programs, can also attract FDI.

As per Contractor et al. (2020), countries with a good legal and regulatory environment can make it easier for investors to navigate the business environment and protect their assets. Consequently, the determinants of FDI in this research consist of Exchange rate, GDP, Infrastructural Development, Trade openness, Inflation, Resource endowment, and Ease of Doing Business. Figure 1.1 shows the FDI inflows to the African continent and sub-regions between 2000 and 2021.

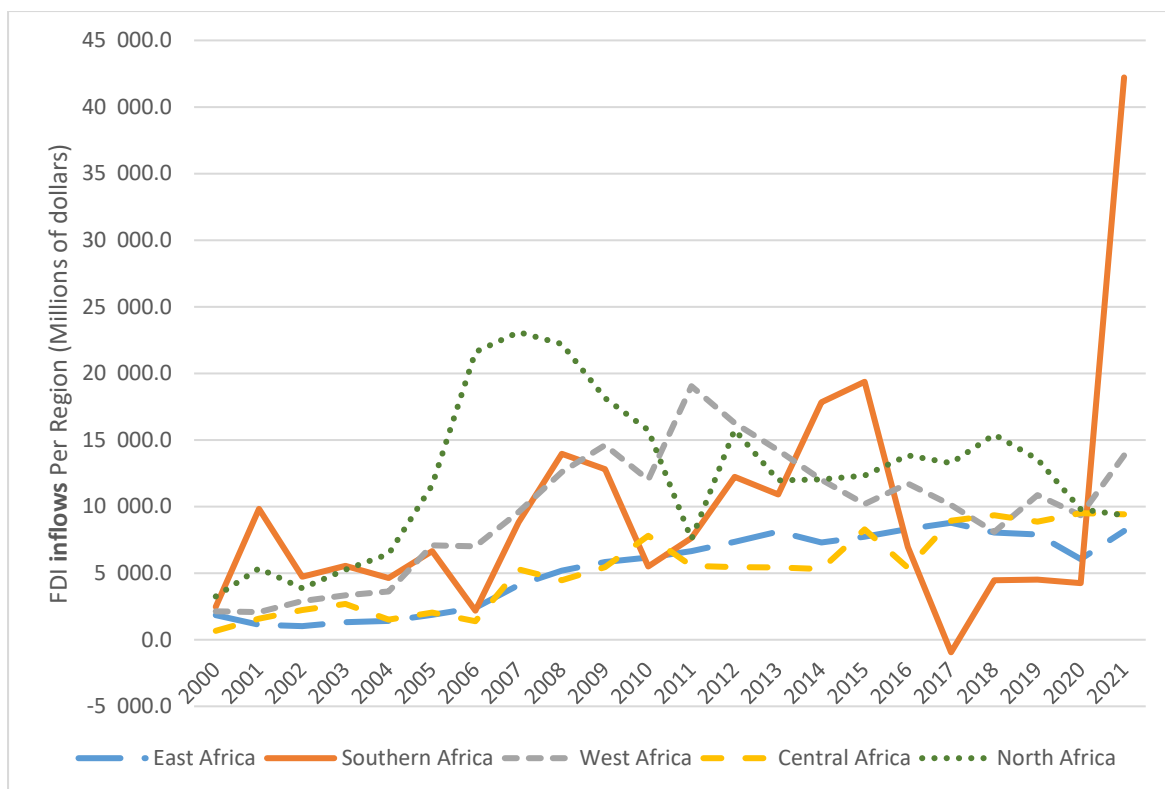


Figure 1. 1: FDI Inflows per Region 2000-2021

Source: UNCTAD (2022)

The FDI inflows to African countries have been fluctuating as shown in Figure 1.1 above. The East African countries have reported a slight change in the FDI inflows as compared to other regions in Africa between 2000 and 2021. The increase of the FDI in some countries compared to others could be due to resource endowment and other macro-economic factors, a proposition that constitutes the premise for conducting the current study. The benefits of the FDI to the nation's progress cannot be trivialized. FDI is a source of capital formation, technical know-how, resource endowment, trade development, and employment creation for developing countries (OECD, 2018). FDI helps bridge the gap between domestic savings and investments (Langalanga & Mouzinho, 2017). Figure 1.2 presents the FDI as a percent of GDP contributions to East African countries between 2000 and 2021.

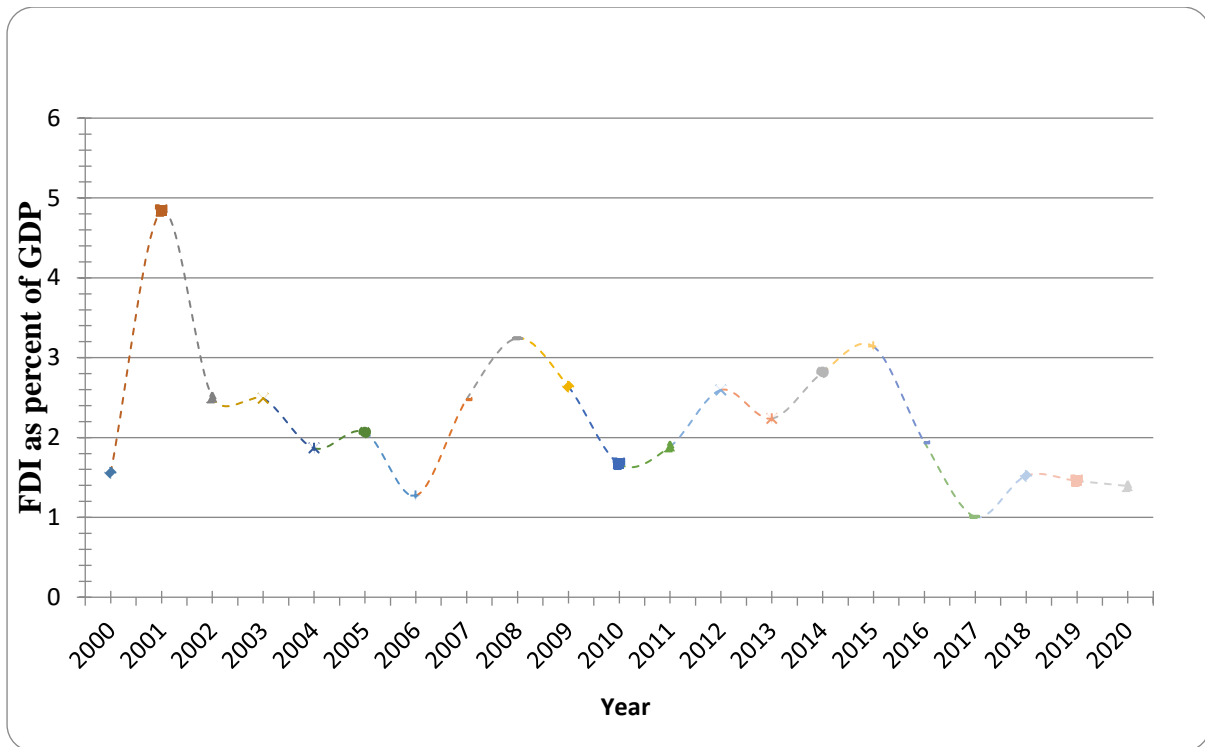


Figure 1. 2: Trends of FDI in EAC as Percent of GDP 2000-2021

Source: World Bank (2022)

Figure 1.2 shows that FDI as a percent of GDP in EAC has been below the optimal. OECD (2008) indicates that the optimal percent of FDI to GDP to significantly spur economic growth in developed countries should be greater than 2.5 percent and 5 percent for developing countries. However, between 2000 and 2021 the FDI as a percent of GDP has been below 5 percent. The benefits of the FDI to spur significant economic growth in East African countries have not been achieved. This necessitated a study to determine how macroeconomic factors (exchange rate and GDP) influences FDI. Previous studies show that resource endowment and other macroeconomic factors influence the extent of the FDI (Hoang & Bui, 2015; Sasana & Fathonim, 2019; Wasseja & Mwenda, 2015).

1.1.3 Macroeconomic Factors and Foreign Direct Investment

Exchange rate and GDP play significant roles in influencing foreign direct investment (FDI) at the federal level. Exchange rates have a direct impact on FDI by affecting the cost and profitability of cross-border investments (Elhussein & Osman, 2019). FDI affects

competitiveness in global markets, thus impacting trade balances and capital flows, thereafter, affecting a state's GDP and efficiency of the entire economy. Zhu, Ahmad, Draz, et al. (2022) argues that a strong currency makes exports more expensive, potentially affecting a country's trade balance, while a weak currency may boost exports but increase the cost of imports. Exchange rate fluctuations have far-reaching implications for businesses engaged in international trade, as well as for individuals traveling or investing abroad. Governments and central banks closely monitor and manage exchange rates to promote export competitiveness, maintain price stability, and attract foreign investment (Bordo, 2021). A favourable exchange rate makes a country's assets and investments more attractive to foreign investors, as it minimizes the amount of acquiring assets and conducting business in that nation. A depreciated currency enhances the competitiveness of a state's exports, making its products and services more affordable for foreign consumers. The latter leads to increased foreign investment in sectors that benefit from a weaker currency. Conversely, an appreciating currency makes a country's assets relatively more expensive, potentially deterring foreign investors. Therefore, exchange rate fluctuations influence the inflow of FDI by altering the relative cost and attractiveness of investing in a particular country (Alshubiri, 2022).

Besides, a strong and growing GDP signifies a thriving economy with increased market potential, higher consumer purchasing power, and improved business prospects. A country with a strong and growing GDP is more likely to attract FDI as it indicates a strong and stable economy (Mugisha, Shukla, Mulyungi, & Ochieng, 2018). Strong and growing GDP serves as a benchmark for economic policy decisions, resource allocation, and investment strategies (Irakoze & Yu, 2020). Additionally, GDP is often used for international comparisons, trade negotiations, and determining a country's economic standing in the global arena.

A country's GDP development acts as an important indicator of its economic health and potential investment chances. Foreign investors are more likely to be drawn to nations with

robust economies because this indicates a favourable business environment and the potential for profit generation. Additionally, a growing GDP is often associated with increased infrastructure development, technological advancements, and a skilled workforce, all of which can further enhance foreign investors' perceptions of a country's appeal as a location for their capital (Obuin, 2020).

1.1.4 Profile of East African Community

The East African Community (EAC) was formed through a treaty that was signed in 1999 and entered into practice in the year 2000 in the countries of Kenya, Tanzania, and Uganda (Magu, 2023). The aim was to encourage East African countries to work together economically and socially. As it aimed to deepen and widen its cooperation among other partner states, Rwanda and Burundi managed to fully join the community by acceding to the EAC treaty in 2007. After almost a decade, The Democratic Republic of the Congo and South Sudan became members in 2022 and 2016, respectively to sphere mutual economic, social, and political benefit with other EAC countries. Currently, EAC is an intergovernmental organization composed of seven member states with its headquarters located in Tanzania. So far, these countries have maintained their aim to continue enhancing trade, investments, and infrastructure development among member states, as well as foster political stability, peace, and security in the region. According to Francis (2022), the EAC is estimated to be a home of more than 283.7 million citizens with an approximate combined GDP of 305.3 million US Dollars.

The EAC countries have collaborated to work together within the EAC framework and develop more frameworks/policies to stimulate investments among the partner states (Kimutai, Oluoch & Opondo, 2022). The promotion policies are vital in promoting FDI in a country. Some promotional policies/ strategies that EAC countries have adopted to enhance the FDI inflows include tax incentives, the creation of Economic zones, security assurance, infrastructure

development, and eradication of corruption (Sakyi&Egyir, 2017; Gatsinzi, 2021; Dagnachew, 2017).

In Kenya, for instance, Machakos County has offered to lease land freely to foreign investors. In addition, the creation of Economic zones such as EPZ is one of the policies being embarked on to encourage FDI in EAC. In Uganda, Free Zones are designated where duty-free goods are stored, manufactured, and or processed for export and this has encouraged the MNCs in the country (Tusiime, 2018). In addition, Tanzania's Export Processing Zones promote goods and services investments, which has positively encouraged the MNCs (Borega, 2019).

Moreover, security enhancement is one of the measures to spur the FDI in the EAC (Njeru, 2019). Security enhancement aims to ensure cooperation and exchange of intelligence among the countries to enhance security and encourage investments (Musera, 2020). The EAC nations have reiterated their will to work together to fight crime and thwart a budding terrorist organization that is harming their economy. In addition, Saba (2020) states that fundamental promotion policies that spur the FDI within the EAC countries are stability and peace coexistence.

The aspect of infrastructure development is one of the fundamental policies deemed critical to influencing FDI in EAC. The EAC countries have taken infrastructural development initiatives (Shinyekwa & Ntale, 2017). Some of the initiatives the EAC countries have taken to spur infrastructure development is establishing the northern and central corridor (Ochieng, Abala & Mbithi, 2020). Further, in Kenya, significant infrastructural developments have taken place, including the SGR and Nairobi Expressway, among others (Wissenbach, 2019). A tenth of the annual budget in Rwanda is committed to transport and other infrastructure development (Mukeshimana, Zhao & Nshimiyimana, 2021).

1.2 Statement of the Problem

The inflows of FDI into East African countries remain low compared to other regions. A study by the UN Conference on Trade and Development (UNCTAD) found that foreign direct investment (FDI) into the EAC were only \$1.8 billion in 2019, representing 2 percent of total FDI inflows to Africa (UNCTAD, 2022). In addition, UNCTAD reports that EAC received an estimated \$3.6 billion in FDI in 2018, which represents 3.5 percent of total FDI flows to Africa, which is significantly lower than the FDI received by other regions such as North Africa, which received an estimated \$11.5 billion in FDI in 2018 (UNCTAD, 2018).

In addition, FDI as a percent of GDP in EAC has been below the optimal (World Bank, 2021). OECD (2008) indicates that the optimal percent of FDI to GDP to significantly spur economic growth in developed countries should be greater than 2.5 percent and 5 percent for developing countries. However, between 2000 and 2021, the FDI as a percent of GDP has been below 5 percent. This implies that FDIs in those countries have not significantly influenced economic growth.

More so, the endogeneity of exchange rates and GDP concerning foreign direct investment (FDI) in East African countries poses a critical challenge for policymakers and investors alike as revealed by Gatimu (2020); Njuguna and Nnadozie (2022). As these nations strive to attract and sustain FDI flows, the intricate interplay between exchange rates and GDP growth has significant implications. According to Nyabakora (2023), the problem lies in the need to comprehend the dynamic feedback loops and causal relationships between these variables within the East African context. Fluctuations in exchange rates impact the cost and attractiveness of investments, while the economic health reflected in GDP growth is crucial for creating a favorable environment for foreign investors. Understanding how these factors mutually influence each other in East African countries which was found to have simultaneous effects is essential for formulating effective policy measures, fostering economic stability, and

promoting sustained foreign investment in the region as Njuguna and Nnadozie (2022) to allude.

Furthermore, Banday, Murugan, and Maryam (2021) investigating foreign direct investment, trade liberalization, and BRICS economic growth, neglected the potential variations across different sectors or countries but looked at FDI as independent variable rather than dependent variable unlike in this study. Qamruzzaman, Karim, and Wei (2019) looked at whether or not there was a foreign direct investment and the Bangladeshi currency have an asymmetrical connection, however they found no evidence for such a connection. Additionally, Rathnayaka Mudiyansele, Epuran, et al. (2021) investigated the effect of trade liberalization on GDP growth and foreign direct investment in Romania, although the study did not touch upon the spill over effects of FDI, yet there is a need for more comprehensive analysis of these effects. Other gaps identified include the non-generalization of the result to other countries due to economic variation. And lastly, inadequate literature depicting the relationship between macroeconomic factors specifically GDP, and exchange rate with FDI in EAC (Wong, Fai, Yee, et al., 2019; Ahmad, Szczepankiewicz, Yonghong et al., 2022). These gaps, therefore, necessitated the need for this research to assess the relationship between macroeconomic factors (GDP and exchange rate) and FDI in EAC.

1.3 Research Questions

- i. What is the effect of exchange rate on foreign direct investment in the East African Community?
- ii. Is there endogeneity of exchange rate and GDP with respect to foreign direct investment in the East African Community?

1.4 Objectives of the Study

- i. To determine the effect of exchange rate on foreign direct investment in the East African Community
- ii. To establish if there is an endogeneity of exchange rate and GDP with respect to foreign direct investment in the East African Community

1.5 Significance of the Study

The study shall be significant to practice, policy, and research. In practice, the EAC countries may streamline their investment activities to stimulate the growth of FDI. To policy, the EAC countries may review or enact investment policies to enhance FDIs. The significant determinants of FDI remain non-consensus among scholars, hence new information has been added for building new knowledge.

1.6 Scope of the Study

The time scope was between 2000 and 2021. The choice of the period between 2000 to 2021 was informed by the fact that it was during this period that the countries under consideration were experiencing erratic growth in FDIs. In addition, all the countries under study have complete data sets over the selected period. Moreover, most of the investment and promotion policies targeting FDI growth in the respective EAC countries were enacted and implemented during this period.

1.7 Organization of the Study

The project is organized into five chapters. Chapter one of this research project introduces the background, research problem, outlines the objectives and questions at hand, justifies the significance of the study, and provides an overview of the scope, as well as the study organization. It sets the stage for the entire research by presenting the context and rationale for the investigation. Chapter two, comprises reviews of the existing theories and studies relevant to the research topic, identifies gaps in the literature, and establishes the theoretical framework.

It lays the foundation for the study by critically analysing and synthesizing prior research, guiding the formulation of research questions. Chapter three outlines the research design, sampling techniques, data collection method, and data analysis procedures, ensuring the study's validity and reliability. Chapter four presents the analysis results, presentation, and interpretation, while addressing research objectives and questions. Lastly, Chapter five provides a conclusion and recommendations, summarizes the key findings, implications, and suggests areas for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Theories, eclectic paradigm theory, Keynesian theory, and Classical theory are discussed in the chapter. The chapter also presents an empirical review from a global, regional, and local perspective.

2.2 Theoretical Literature Review

Based on the research objectives, theoretical frameworks which include eclectic paradigm theory, Keynesian theory, and Classical theory have been reviewed.

2.2.1 Eclectic Paradigm Theory

John Dunning developed the Eclectic Paradigm in 1995. The theory's recognition of the interplay of ownership, location, and internalization advantages provides a framework for understanding the motivations behind FDI decisions. Additionally, the eclectic nature of the Paradigm allows for incorporating various other theories and concepts, making it flexible and adaptable to changing economic conditions and industries (Cantwell & Narula, 2001). MNCs seek to maximize these advantages by choosing the location that offers the best combination of all three factors. The Eclectic Paradigm has been widely used and remains relevant in international business and economics (Dunning, 1995).

However, some criticism has been directed against this theory. It is argued by Campagnolo (2012) that foreign direct investments, in most cases, only benefit elites and thus, the flow of resources to a host country does not bring about the development of the state as a whole. Moreover, Karanjai, Cavalcanti, Bartlett, and Rudolph (2015) report that foreign investment in some cases leads to unequal development within a state because the elites benefit while the foreigners exploit the large group of the society. Thus, although investments create opportunities for countries, they could lead to the exploitation of others, and the theory side-

lined to establish a framework that could lead to equivalent benefits and opportunities resulting from the investments.

The FDI can be influenced by the extent of infrastructural development, gross capital formation, GDP, human development index, and labour productivity. The theory's recognition of the interplay of ownership advantages, location advantages, and internalization advantages provides a framework for understanding the motivations behind FDI decisions. Additionally, the eclectic nature of the paradigm allows for the incorporation of various other theories and concepts, making it flexible and adaptable to changing economic conditions and industries. As a result, the Eclectic Paradigm has been widely adopted in both academia and business practice and continues to shape the understanding of FDI and MNC behavior. Therefore, the theory was considered pertinent to guide the investigation, and it fully demonstrates the rationale that stimulates FDI in a country.

2.2.2 Keynesian Theory

Keynesian theory is pegged on the total spending within an economy which is influenced by a host of economic factors. New investments are not attractive when the macroeconomic factors are not conducive (Crotty, 1992). Individual firms have no control over macroeconomic factors. The macroeconomic factors can include labour productivity, market size, political stability, and inflation (Enu, Havi, and Attah-Obeng 2013; Nguyen, 2020; Adebayo, Onyibor & Akinsola, 2021). Gwenhamo (2011) and Ullah and Khan (2017) indicated that macroeconomic factors can include infrastructure development, labour productivity, and political stability. The critical determinants of investment decisions include changes in technology, and labour productivity among others (Crotty, 1992).

As stated by the theory, the critical determinants of investments are the economy's growth rate, change in technology, labour productivity, changes in the rate of interest, increase in capital stock, and inflation. Businesses looking to increase their investments in East Africa should do

extensive research on the real interest rates and marginal capital efficiency of the local businesses. To make investments and get higher returns, the marginal efficiency of capital must be higher than the real interest rate.

2.2.3 Classical Theory

Adam Smith developed classical theory in the 18th century. The theory indicates that the determinants of investments, whether local or foreign, include cost, return, and expectations (Alexiou, Tsaliki & Tsoulfidis, 2016). Investors are reluctant to invest in countries where business costs are high and expected returns are low. Some factors determining the cost of doing the businesses include technology, infrastructure, trade openness, and the country's stability based on the political situation (Meade, 2013). The classical economic theory is based on the idea that the economy can regulate itself.

The theory indicates that foreign direct investments are fundamental in improving the development of the host countries. Foreign investment diffuses the transferred technology to the host economy and helps the workers who are the citizens of the host state learn how to handle the technology (Harris, 2007). Investments increase employment creation in a country positively. The unemployment problem that may have existed in a host state may be solved by increasing foreign investments. Thus, it is critical to look for the factors that could hinder investments in a country, such as poor infrastructure, political instability, and insecurity, among others.

However, some criticism has been directed against this theory. It is argued by Campagnolo (2012) that foreign direct investments, in most cases, only benefit elites. Thus, the flow of resources to a host country does not bring about the development of the state as a whole. Moreover, Karanjai, Cavalcanti, Bartlett, and Rudolph (2015) report that foreign investment in some cases leads to unequal development within a state because the elites benefit while the foreigners exploit the large group of the society.

Thus, although investments create opportunities for countries, they could lead to the exploitation of others, and the theory side-lined to establish a framework that could lead to equivalent benefits and opportunities resulting from the investments. Foreign investors are wary of investing in developing countries with high business expenses and poor projected returns. Some factors determining the cost of doing business include technology, infrastructure, trade openness, and the country's stability. Foreign direct investments in East African Countries could be attracted by infrastructure development, political stability, and security levels, among others.

2.3 Empirical Literature

The research conducted by Gizaw, Kefelegn, Minwuye, et al. (2023) focused on investigating the impacts of rules on East African countries' potential to induce and benefit from FDI. The study examined the role of business regulations, including factors such as ease of doing business, bureaucratic procedures, and legal frameworks, in attracting FDI and promoting economic growth. The researchers employed ordinary least square, fixed effects, and random effects to examine the connection between East African firms' rules, foreign direct investment inflows, and GDP development. The findings indicated that access to credit and electricity, enforcing contracts, paying taxes, and protecting minority investors have significant influence on FDI. Notably, each policy reform in EAC since 2010-2019 had a 3.09 percent increase in FDI among East Africa Countries.

Ahmad, Szczepankiewicz, Yonghong, et al. (2022) sought to determine whether Chinese foreign direct investment has a stimulating impact on the Pakistan's economy. The authors employed the Autoregressive Distributed Lag (ARDL bounds) testing approach to analyse the data and examine the long-term relationship between Chinese foreign direct investment and economic growth in Pakistan. The research utilized time-series data from 1990 to 2019 and included relevant variables such as trade openness, inflation, labour force, exchange rate, GDP,

interest rate, and remittances in the analysis. The finding showed a positive significant relationship between exchange rate, inflation, GDP, interest rate, trade openness, and economic growth. However, the study focused on the developed Pakistan's economy while the current study focuses on a developing economy of an African country.

The research conducted by Njuguna and Nnadozie (2022) explored ease of doing business's influence in shaping Africa's economic climate and attracting FDI. The study emphasized the importance of a favourable investment climate in attracting FDI inflows to African countries. It examined the impact of various factors that constitute the investment climate, such as regulatory frameworks, infrastructure, corruption levels, political stability, and access to finance. The research utilized econometric model to assess the relationship between the ease of doing business and FDI. The findings suggested that improvements in the ease of doing business positively affect FDI inflows in African countries, indicating that a conducive investment climate is crucial for attracting foreign investment. The study provided valuable insights for policymakers and stakeholders seeking to enhance the investment climate and attract FDI to foster economic development in Africa.

Moreover, Banday, Murugan, and Maryam (2021) focused on investigating the relationship between foreign direct investment (FDI), trade openness, and economic growth in the BRICS countries. The study utilizes panel data analysis to examine effects of foreign direct investment and free trade on economic growth, both long and short term within the BRICS countries. The authors used panel data from 1990 to 2018 and employ the ARDL model, Granger causality tests, and panel unit root test model. The findings of the research indicated that both FDI and trade openness significantly contribute to economic expansion in the BRICS countries. The study shows that these countries can enhance their economic growth prospects by attracting FDI and promoting trade openness. The study, however, focused on the overall impact of FDI on economic growth and neglected the potential variations across different sectors. It is crucial

to investigate the sector-specific effects of FDI on economic growth to understand how FDI contributes to the development of specific industries and sectors within an economy. Secondly, the study looked at FDI as an independent variable rather than a dependent variable.

The research conducted by Azam and Haseeb (2021) focused on exploring the determinants of foreign direct investment (FDI) in the BRICS countries, with a specific emphasis on the role of renewable and non-renewable energy. The study investigated whether energy-related factors influence FDI inflows in these countries. The authors employed an empirical approach, utilizing panel data from the BRICS countries from 1990 to 2018. The authors applied various models such as FMOLS, DOLS, CS-ARDI, CCEMG, and AMG to analyse the data and examine the relationship between FDI and energy factors which exhibited a positive significant effect.

Moreover, the findings of the research revealed that trade, tourism, and GDP as the key FDI inflows driver. The study further indicated that an increase in renewable energy consumption positively affects FDI inflows, thus, the potential attractiveness of renewable energy sectors for foreign investors. Furthermore, the research reveals that non-renewable energy consumption also plays a crucial role in attracting FDI, albeit with a lesser magnitude. However, the study's weakness is that it was conducted in developed countries. The extent of the developments in those countries based on the infrastructure, security, political stability, and economic growth, among others, cannot be compared to the case of developing countries such as Kenya, Burundi, Rwanda, Tanzania, Uganda, and DRC.

Rathnayaka Mudiyanse, Epuran, et al. (2021) conducted research aimed to examine the causal relationship between trade openness and foreign direct investment (FDI) in Romania. The study utilizes econometric techniques, including the Autoregressive Distributed Lag (ARDL) model and the Granger causality test to analyse the relationship between trade openness and FDI inflows in Romania. The findings of the research indicated a bidirectional

causal relationship between trade openness and FDI in Romania. This suggested that an increase in trade openness leads to an increase in FDI inflows, and vice versa. The study also highlighted the significance of other factors, such as exchange rates and economic growth, which influence the relationship between trade openness and FDI. However, the study was carried out in Romania, thus, the finding cannot be generalized for the case of the current study. Secondly, the study did not touch upon the spill over effects of FDI, yet there is a need for a more comprehensive analysis of these effects. Spill overs can occur through knowledge transfer, technology diffusion, skill upgrading, or backward and forward linkages. Understanding the extent and mechanisms of spill over effects from FDI provides valuable insights into how FDI can catalyse broader economic development.

Cieślak (2020) objectively researched to gain insights into the factors influencing foreign direct investment (FDI) from OECD member countries from 1996 to 2015 Poland. The study utilizes Granger causality tests to identify causal relationships between FDI and significant determinants of FDI found through regression analysis, both in the short and long term. The research finding revealed that geographical distance, GDP sum, investment cost, and labour ratio were significant determinants of FDI. The study focused to establish causal relationships between FDI and significant determinants of FDI, however, there is a need for more research to identify the endogeneity of exchange rate and GDP. Understanding the causal direction provides valuable insights for policymakers in formulating effective strategies.

Further, Obuin (2020) investigated the factors influencing Foreign Direct Investment (FDI) in Uganda from 2007 to 2019. The study aimed to identify and analyse the key determinants that attract or hinder FDI inflows in the country. The author conducted a comprehensive analysis of the factors affecting FDI in Uganda by utilizing a range of quantitative and qualitative methods. The research incorporates various variables such as market size, natural resources, political stability, infrastructure, human capital, and government policies to examine their

impact on FDI. The analysis result showed that gross domestic product growth and gross capital formation significantly and positively affect Uganda's FDI while private investment does not. The study did not specify the research design nor address any limitations or potential biases. Irakoze and Yu (2020) performed research in Burundi. A non-experimental research design was used in the study. Time series data from 1989 to 2017 was considered by the researchers. Only trade openness, not GDP or human capital, was shown to be a key factor of FDI, according to the research. The study's weakness is that it only focused on trade openness, GDP, and human capital as the factors influencing FDI, whereas the current study includes additional factors like infrastructure, gross capital formation, labour productivity, market size, political stability, inflation, interest rate, and exchange rate. Secondly, the study did not explicitly mention the control variables considered in the analysis unlike in this study.

The research article by Qamruzzaman, Karim, and Wei (2019) investigated the existence of an asymmetric relationship between exchange rates and Foreign Direct Investment (FDI) in Bangladesh. The study aims to determine whether exchange rate movements have a differential impact on FDI inflows, depending on whether the exchange rate appreciates or depreciates.

The authors utilize nonlinear Autoregressive Distributed Lag (ARDL) analysis to examine the data and explore the potential nonlinear relationship between exchange rates and FDI in Bangladesh. The study utilizes time-series data from 1974Q1 to 2016Q4 and includes other relevant variables such as fiscal and monetary policy, exchange rate, and FDI in the analysis.

The findings of the research indicated the presence of an asymmetric relationship between exchange rates and FDI in Bangladesh. Specifically, the study revealed that a lower exchange rate led to a rise in foreign direct investment (FDI), suggesting that a weaker domestic currency attracts more foreign investment. However, there was no correlation between a rising exchange rate and foreign direct investment, according to the research.

Wong, Fai, Yee, et al. (2019) examined Foreign Direct Investment (FDI) in ASEAN countries and the effect of macroeconomic policies and exchange rates. The study aimed to investigate how macroeconomic policy factors and exchange rate fluctuations influence FDI inflows in the ASEAN region. The authors analyse the data from 1995 to 2015 and employ the panel unit root test, DOLSE, FMOLSE, and panel cointegration test to assess the relationship between macroeconomic policies, exchange rates, and FDI. The authors considered variables such as interest rates, inflation, government spending and practices, exchange rate volatility, and FDI inflows in their analysis. According to the study's findings, macroeconomic policies and exchange rate volatility play a major role in determining the amount of FDI flowing into ASEAN economies. Specifically, lower interest rates, lower inflation rates, and increased government spending are associated with higher FDI inflows. Additionally, evidence from the study shows that fluctuations in exchange rates have a negative effect on foreign direct investment., suggesting that stability in exchange rates is crucial for attracting foreign investors. However, one potential gap in this research is the limited exploration of country-specific differences within the ASEAN economies. While this research examines how changes in exchange rates and fiscal policy have affected foreign direct investment across the ASEAN area, however there may be variations among individual countries within the region.

2.4 Overview of the Literature

The theoretical literature review has included the analysis of eclectic paradigm theory, Keynesian theory, and Classical theory. The theoretical literature review is a set of concepts and theories that provide a framework for understanding a particular phenomenon. It serves as a guide for research by outlining the key variables and relationships being studied, and it helps provide a logical structure for the research. The discussed theories are regarded as the most relevant based on the study objectives. In addition, based on the empirical literature, a number of studies were comprehensively analysed and evaluated based on this study's key variables

(GDP, exchange rate, and FDI) revealing their interrelationship as well as the existing gaps. To mention a few, research by Banday, Murugan, and Maryam (2021) investigated the link between FDI, trade liberalization, and GDP expansion in the BRICS nations. The analysis result revealed that both FDI and trade openness have a positive and significant impact on economic growth in the BRICS countries. However, the study neglected the potential variations across different sectors or countries. Qamruzzaman, Karim, and Wei (2019) investigated foreign direct investment (FDI) in Bangladesh has an asymmetric relationship with the country's exchange rate. The research findings indicated that a lower exchange rate led to a rise in foreign direct investment (FDI), suggesting that a weaker domestic currency attracts more foreign investment but did not find a significant relationship between exchange rate appreciation and FDI. The research conducted by Azam and Haseeb (2021) focused on exploring the influencers of FDI in BRICS nations. According to the results of the study; trade, tourism, and GDP as the Key FDI inflows driver. However, the study's weakness is that the findings can only apply to developed countries.

Additionally, Rathnayaka Mudiyansele, Epuran, et al. (2021) conducted research aimed to investigate the link between Romania's trade liberalization and FDI inflows. The findings of the research indicated there is a two-way causal connection between FDI and trade openness in Romania, however, the study did not touch upon the spill over effects of FDI, yet there is a need for a more comprehensive analysis of these effects. Cieřlik (2020) objectively researched to gain insights into the factors influencing foreign direct investment (FDI) from OECD involved states from 1996 to 2015 Poland. The research finding revealed that geographical distance, GDP sum, investment cost, and labour ratio were important determinants of FDI, however, there is interest for more research to identify endogeneity of exchange rate and GDP. Other gaps identified include non-generalization of the result to other countries due to economic variation, and inadequate literature depicting the relationship among macroeconomic

factors (GDP, and exchange rate), and FDI from abroad in East African societies as revealed by Wong, Fai, Yee, et al. (2019); Ahmad, Szczepankiewicz, Yonghong, et al. (2022). Addressing the non-generalization and variations of research results to other countries due to economic variation involves adopting a comparative analysis approach. The researcher expanded the scope of this study to include multiple countries, representing diverse economic conditions. Additionally, to tackle the issue of inadequate local literature on the relationship among macroeconomic factors (GDP and exchange rate) and FDI, the researcher embarked on international comprehensive literature reviews to identify existing gaps and limitations in similar scenarios. Lastly, the researcher conducted in-depth study and empirical analyses that specifically focused on the spill-over effects of FDI in East African Community.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the methodology adopted in the study. The chapter is precisely discussed in sections. Each section is comprehensively discussed to have a detailed methodology for the analysis.

3.2 Research Design

There are two types of research design namely, experimental, and non-experimental (Creswell, 2014). Under the experimental design, the predictor variables can be manipulated (altered), while it is not possible to alter the predictor variables under the non-experimental research design (Patten & Newhart, 2017). This study used a non-experimental research design. The design was the most relevant to be adopted in the study since the study used secondary data.

3.3 Theoretical Framework

To develop the model, the Eclectic Paradigm Theory was used. The theory recognizes that firms engage in FDI when they possess specific advantages that are transferable across borders and that the choice of location is influenced by various factors, including macroeconomic conditions. Applying the Eclectic Paradigm in the study of the EAC allows for a nuanced examination of the unique ownership advantages of multinational enterprises, the significance of local economic conditions, and the strategies employed to internalize benefits, providing a comprehensive framework to understand the intricacies of FDI in the East African region. According to the eclectic paradigm, ownership advantages are the particular skills and resources that a company has, which provide it with a competitive edge in the global market. Benefits a company might reap by internalizing the production of its goods and services are known as internalization advantages in-house, as opposed to relying on external sources. Location advantages refer to the favourable conditions in the host country that make it an

attractive destination for investment, such as low labour costs, favourable tax policies, and access to new markets. The eclectic paradigm argues that firms weigh the costs and benefits of FDI. Hence, the theoretical equation became:

$$FDI = f(OLI) \dots\dots\dots 3.1$$

Where OLI is O for ownership, L for location, and I for internalization.

3.4 Empirical model

The explanatory variables (exchange rate, GDP, infrastructural development, trade openness, inflation, resource endowment, and ease of doing business) included in the empirical model fall into broad categories of OLI. The localization advantages can consist of natural resource endowments, inflation, GDP, infrastructure development, ease of doing business, and trade openness. Consequently, the internalization advantages entail exchange rate, political instability, licensing, and franchising, while the ownership advantages includes market internalization and governance. Thus, the empirical model became:

$$FDI_i = \alpha + \delta EXC_i + x_i' \beta + \varepsilon_i \dots\dots\dots 3.2$$

Where FDI_i represents the value of dependent variable for country i given $i = 1, 2, \dots, N$ ($N =$ number of countries) which depends on the vector of explanatory variables, $x_i = (x_{1i}, x_{2i}, \dots, x_{ki})$, and i^{th} country's Exc rate. α , δ and β are unknown parameters and ε_i is the error term.

Incorporating cross-section and time series components in equation 3.2, the resulting equation 3.3 becomes;

$$FDI_{it} = \alpha + \delta EXC_{it} + x'_{it} \beta + \varepsilon_{it} \dots\dots\dots 3.3$$

Where the time index, $t = 1, 2, \dots, T$ is included. The panel data set consist across of $N=6$ countries and $T=22$ time periods. The researcher followed Njuguna and Nnadozie (2022) estimation approach. The use of estimation method was due to its appropriation on dealing with endogeneity issues, which arise when an explanatory variable is correlated with the error term.

The estimation method provides valid predictors that was not directly correlated with the error

term, helping to address endogeneity concerns. The model coefficients for pooled panel OLS estimation are derived through combining information from periods i and t into a single longitudinal regression using NT observations. Due to the possibility of endogeneity, the pooled panel estimate was chosen above alternative estimators, including those that assume variable intercepts, like fixed and random effects estimators. Further, the Hausman test results estimated justified the use of pooled panel model. The variable intercept models, which convert data into departures from the mean, may not be the best choice for this investigation.

The pooled panel OLS has a drawback since it does not account for any potential unobserved heterogeneity in the dataset. The pooled OLS estimate is consistent, nevertheless, if it is true that the regressors and error terms are independent. Due to the likelihood that FDI may have concurrent interactions with EXC and GDP, the IV approach and CFA were taken into consideration. The CFA and 2SLS approaches are comparable. Assuming EXC and GDP are endogenous explanatory variables (EEVs) then equation 3.3 may be rewritten as

$$FDI = w_1' \emptyset_1 + \theta_1 EXC + \theta_2 GDP + \varepsilon_1 \dots \dots \dots 3.4$$

Where w_1 is a subset of w which includes all exogenous variables in equation 3.3 and external instruments. Political stability which is an institutional variable is used as an external instrument for exchange rate while household consumption is as an external instrument to GDP. The error term ε_1 is unlikely to be correlated with external instruments but the instruments were found to be correlated with EEVs. Therefore, EXC and GDP can be expressed in their reduced forms with error terms (μ_1 and μ_2)

$$EXC = w_1' \pi_1 + \mu_1 \dots \dots \dots 3.5$$

$$GDP = w_1' \pi_2 + \mu_2 \dots \dots \dots 3.6$$

Where: $E(w\mu_1) = 0$ and $E(w\mu_2) = 0$

Replacing equation 3.5 and 3.6 into equation 3.4 we get:

$$FDI = w_1' \emptyset_1 + \theta_1 EXC + \theta_2 GDP + \alpha \hat{u}_1 + \alpha_2 \hat{u}_2 + v \dots \dots \dots 3.7$$

Where \hat{u}_1 and \hat{u}_2 are OLS residuals. The control variables in the study included infrastructural development, trade openness, inflation, resource endowment, and ease of doing business.

3.5 Definitions and Measurement of Variables

The discussion of variables, definitions, and measurements of the variables are presented in Table 3.1. The selected determinants of FDI include exchange rate and GDP. The control variables included infrastructural development, trade openness, inflation, resource endowment, and ease of doing business.

Table 3. 1: Variable Definition and Measurement

Variable	Definition	Measurement
FDI	FDI is the investment in a foreign country	Measured as a percent of foreign direct investment inflows to GDP.
Exchange rate	The worth of one currency in terms of another.	Local currency unit relative to the U.S. dollar
GDP	the total value of all products and services created inside a state's boundaries over a given time period	Summed up the total expenditures on goods and services in an economy. Data in current, USD (Millions)
Infrastructural Development	Refers to the level of growth in transport facilities, information and communication facilities, and energy facilities in a country.	Infrastructural development expenditure as percent of GDP
Trade openness	Transparency in doing business in a country.	Value of products and services exported and imported as a percentage of GDP

Variable	Definition	Measurement
Inflation	Changes in prices of goods and services throughout the country's economy.	Measured as annual percent of consumer prices
Resource endowment	The Resource Endowment is a measure of the relative abundance or scarcity of natural resources in a country or region.	Measured as a percent of GDP
Ease of Doing Business Score	Level of simplicity, efficiency, and transparency with which businesses operate within, particularly economic environment.	Score on the ease of Doing Business, where 0 indicates the best performance and 100+ indicates worst performance.

3.6 Data Type and Source

The panel data was used. The rationale of the panel is that it can help make decisions regarding future values/outcomes. The research used published annual data from 2000 to 2021 and cross-section of 6 EAC countries namely Burundi, Kenya, Rwanda, Tanzania, Uganda and DRC. South Sudan, one of the EAC countries, was excluded from the study because it had not been reporting its data to the World Development Index. The choice of the range was made since all the countries under study have complete data sets over the selected period. The World Bank Development Index (WDI), the electronic Eurostat database, and publications from the United Nations Development Programme were the primary sources of data.

3.7 Data analysis

The study estimated pooled panel ordinary least squares (OLS) to answer the first objective and estimated instrumental variable (IV) method and control function approach (CFA) to address the second objective. The first objective studied how the rate of exchange rate impacted FDI in EAC while the second objective established if there is an endogeneity of exchange rate and GDP with respect to FDI in EAC. Endogeneity refers to correlation between the independent variable and the error term in a study (Antonakis, Bendahan, Jacquart & Lalive, 2014). This problem can be addressed by using an instrumental variable, a control variable, or by using a method such as two-stage least squares. The control function approach (CFA) and the instrumental variable estimating technique (IV) in the form of two-stage least squares (2SLS) were employed in the present investigation to address this endogeneity concern.

3.8 Diagnostic Tests

The panel data regressions models were checked for inconsistency and spuriousness by normality test , multicollinearity, and heteroscedasticity. This implied that the results would be relied upon for decision making and forecasting if the conditions of the mentioned diagnostic tests were met.

CHAPTER FOUR

EMPIRICAL FINDINGS

4.1 Introduction

Empirical findings include the results and analysis of a research study, which include various quantitative data and interpretations. Research findings include a summary of the data collected and the statistical analyses performed, including any significant relationships or patterns observed. The discussions typically involve interpreting these findings considering the research questions as well as reviewing and comparing the results to previous studies. Descriptive statistics, correlation analysis, diagnostic tests, and regression analysis findings are all included in the sections. The discussions of the results are grounded on the aims of the research.

4.2 Descriptive Statistics

Descriptive statistics summarize and describe the key characteristics of a set of data. The mean, standard deviation, minimum and maximum are among the descriptive statistics used in the study. Table 4.1 below displays the results.

Table 4. 1: Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Minimum	Maximum
FDI (as a percent of GDP)	132	2.427	2.274	-.001	12.716
Exchange rate (Local currency units to USD)	132	1174.499	900.667	21.818	3727.069
GDP (in USD Millions)	132	24174.867	23917	784.654	109704
Infrastructural Development (as a percent of GDP)	132	0.012	.014	0	0.146
Trade openness (as a percent of GDP)	132	.218	.698	.023	7.323
Inflation (Annual percent of consumer prices)	132	7.945	5.621	-.687	31.523
Resource Endowment (as a percent of GDP)	132	11.889	9.188	1.227	40.492
Ease of Doing Business (0 = lowest performance to 100= best performance)	132	43.899	18.44	11.028	88.44

Source: Study Data

Table 4.1 above presents the descriptive statistics portraying an overview of key economic indicators within the East African community (EAC). On average, foreign direct investment (FDI) accounts for about 2.43 percent of the Gross Domestic Product (GDP) with notable variability, ranging from almost negligible values to as high as 12.72 percent. Exchange rates show substantial fluctuations, with an average of 1174.499 local currency units per US dollar, ranging between 21.818 and 3727.069. Uganda accounts for the higher exchange rates with an average of above 3000 Uganda shillings to US dollars.

GDP figures reveal a wide disparity, ranging from 784.654 to 109,704 million USD, highlighting the diverse economic sizes within the region. Irakoze and Yu (2020) asserted that this wide range in GDP signifies disparities in economic development and growth within the EAC region. Policymakers should consider these differences when formulating policies to promote regional integration and collaboration. The reliance on agriculture as the main source of income for many of these countries has led to fluctuations in GDP as weather patterns can impact crop yields. Secondly, political instability and conflict can disrupt economic activity and discourage investment, hindering growth. Thirdly, corruption and poor governance can result in a lack of investment in critical infrastructure and human capital, further stifling growth. In addition, reliance on commodity exports can make countries vulnerable to changes in global prices, which can negatively affect the GDP.

Infrastructural development, trade openness, inflation, resource endowment, and ease of doing business exhibit considerable variation as well, illustrating the heterogeneous economic landscapes across the East African Community Countries. The findings agree with Wong, Fai, Yee, et al. (2019) who examined the influence of ASEAN economies' currency rates and macroeconomic policies on FDI. The study established that changes in trade volumes, investments, interest rates, and political and economic stability can all contribute to shifts in demand for US dollars and, therefore, the exchange rates of East African currencies. Various

factors, including the value of the US dollar, can influence exchange rates in East African countries. The US dollar is widely traded and is used as a benchmark currency in many international transactions, which can impact the demand for it in East African countries. As a result, fluctuations in the value of the US dollar can impact the purchasing power and economic growth of East African countries. The results are similar to that of Obuin (2020), who looked at how different variables affect FDI in Uganda. The study revealed that infrastructure development in East African countries has been varying due to various factors. Firstly, many of these countries face funding constraints and might not have enough money to start major infrastructure projects. In addition, political instability and conflicts can disrupt infrastructure development by diverting resources from investment in this area. Corruption can also stifle infrastructure development by reducing the availability of resources and deterring foreign investment. Insufficient technical expertise and a lack of coordination between government agencies can also pose challenges to infrastructure development.

Further, the findings agree with Irakoze and Yu (2020), who found trade openness to be a key factor of FDI. Irakoze and Yu alluded that trade openness varied across East African countries over time, according to the value of products and services exported and imported as a percentage of GDP. In recent years, countries such as Kenya, Rwanda, and Uganda have seen an increase in their trade openness due in part to reforms aimed at promoting trade and reducing barriers to entry. Tanzania and Burundi, on the other hand, have seen a decline in their trade openness, possibly due to a lack of investment in infrastructure and an over-reliance on a few key exports. It is important to note that trade openness is influenced by a complex array of factors, including political stability, macroeconomic conditions, and global trends.

Moreover, the results agree with Ahmad, Szczepankiewicz, Yonghong, et al. (2022), who depicted that inflation stimulated Pakistan's economic growth, though sometimes there is variation in time. This can affect any country's economy including developing EAC countries.

The substantial variation in inflation as per the analysis among the EAC countries has implications for economic stability and monetary policy coordination. A more harmonized approach to inflation targeting could be beneficial for promoting regional trade and investment, as well as mitigating the negative impacts of inflation on consumers and businesses. The inflation in East African countries has been varying due to a combination of domestic and external factors. Variations in the price of food and fuel have been one of the main causes of inflation since they may significantly affect the entire cost of living. Additionally, government spending and money supply in the economy can influence inflation. Furthermore, external factors, such as global economic conditions, can also affect inflation in East Africa.

The ease of doing business score varies across East African countries due to various factors. Countries such as Rwanda, Kenya, and Uganda have implemented reforms to streamline administrative processes, reduce regulatory burdens, and improve access to credit, resulting in higher scores. In contrast, countries such as Burundi and South Sudan have faced political instability and a challenging business environment, resulting in lower scores. Other factors that can impact a country's ease of doing business score include the strength of property rights, the efficiency of the judicial system, and the level of corruption. A favourable business climate can drive economic expansion and draw in foreign capital. This analysis result agrees with Cieřlik (2020); Wong, Fai, Yee, et al. (2019), who revealed that lower interest rates, lower inflation rates, and increased government spending and practices are associated with higher FDI inflows.

4.3 Correlation Analysis

Correlation analysis is a statistical method for examining the magnitude and direction of a relationship between two or more independent variables. Pearson's r , which runs from -1 (perfectly negative correlation) to 1 (perfectly positive correlation), with 0 denoting no connection, is the most common correlation coefficient. In Table 4.2, the correlation findings are enumerated.

Table 4. 2: Pairwise correlation Analysis

Variables	FDI	EXR	GDP	INFL	TO	EDBS	IFS	REI
FDI	1							
EXR	-.338***	1						
GDP	.423***	-0.167*	1					
INFL	-0.081	-0.210**	-0.063	1				
TO	0.179**	0.071	0.036	-0.120	1			
EDBS	-.224***	.458***	0.024	-.280***	.319***	1		
IFS	0.138	0.170**	0.207**	0.031	.510***	.244***	1	
REI	0.136	.488***	-.489***	0.110	0.059	-0.082	-.318***	1

*All the variables have been log transformed before analysis. FDI – Foreign direct investment, EXR- Exchange rate, GDP- Gross Domestic Product, IFS – Infrastructure development expenditure, TO -Trade openness, INF- Inflation rate, EDBS- Ease of doing business score. ***, ** and * represents 1%, 5% and 10% level of significance, respectively.*

From Table 4.2 above foreign direct investment (FDI) shows a negative correlation with the exchange rate and ease of doing business, implying that higher FDI might coincide with lower exchange rates and better business conditions. Lower exchange rates tend to make a country's goods and services cheaper for foreign investors, attracting more FDI inflow. A weaker exchange rate can stimulate export-oriented industries and make a country's goods more competitive in the global market, prompting increased investment. Additionally, when the ease of doing business improves, it signifies a more favourable business environment with reduced bureaucratic hurdles, streamlined regulations, and increased efficiency. Investors are more likely to flock to countries where they encounter fewer obstacles, administrative burdens, and where their investments are protected. Therefore, a negative correlation between FDI and the ease of doing business suggests that higher FDI levels coincide with better, more investor-friendly conditions.

FDI exhibited positive correlations with Gross Domestic Product (GDP), infrastructure, and resource endowment, suggesting that higher FDI aligns with increased GDP, better infrastructure, and richer resource endowment. When FDI and GDP are positively correlated, it signifies that higher levels of foreign investment coincide with increased economic output within a country. Foreign investments often bring in capital, technology, and expertise, contributing to economic growth and higher GDP figures.

Moreover, the positive correlation between FDI and infrastructure development suggests that foreign investors are attracted to regions or countries with better infrastructure. A well-developed infrastructure, including transportation, communication, and utilities, is crucial for businesses to operate efficiently, making such locations more appealing for foreign investments. Similarly, the positive correlation between FDI and resource endowment implies that regions or nations rich in natural resources tend to attract higher levels of foreign investment. Natural resources often represent opportunities for industries, energy production, or raw material extraction, which entice foreign investors.

The study results concur with the findings of Ahmad, Szczepankiewicz, Yonghong, et al. (2022) who found a favourable correlation between the currency market, economic growth, interest rates, remittances, trade openness, and foreign direct investment. Further, Obuin (2020) showed that increases in both gross capital formation and gross domestic output are positively associated with FDI while Irakoze and Yu (2020) showed that trade openness has a positive effect on FDI. Lastly, Njuguna and Nnadozie (2022) suggested that improvements in the ease of doing business positively affect FDI inflows in African countries, indicating that a conducive investment climate is crucial for attracting foreign investment.

4.4 Diagnostics Tests

Diagnostic tests are statistical techniques used to evaluate the assumptions and validity of a statistical model. These tests help to identify potential problems or limitations of a model and to assess its overall accuracy and reliability. Before estimating a panel data model, the normality test, multicollinearity, and heteroscedasticity tests must be met to avoid getting spurious and inconsistent results.

4.4.1 Normality Test Results (Jarque-Bera)

The Jarque-Bera normality test was conducted to assess the normality of residuals after estimating the pooled Ordinary Least Square (OLS) model.

H₀: Data is normally distributed

H₁:Data is not normally distributed

Jarque-Bera normality statistic was 3.903 with a p-value of 0.1421. The p-value was greater than 0.05 at 5% level of significance, therefore we fail to reject null hypothesis and conclude that the data is normally distributed.

4.4.2 Multicollinearity Test (VIF)

Variance inflation factors (VIF) were used to examine the data for multicollinearity; the findings are shown in Table 4.3 below.

Table 4. 3: Multicollinearity Test

Variable	VIF	1/VIF
Exchange rate	2.14	0.4663
GDP	2.03	0.4933
Infrastructural Development	2.48	0.4031
Trade openness	1.95	0.5130
Inflation	1.16	0.8637
Resource endowment	3.06	0.3268
Ease of Doing Business	1.78	0.5631

Source: Study Data

The table 4.3 above depicts that no variable has a VIF value of more than 10, which indicates the lack of multicollinearity. According to Katrutsa and Strijov (2017), multicollinearity is present when the VIF values are more than 10. Multicollinearity produces unstable coefficient estimates for individual predictors due to exaggerated standard errors and confidence ranges.

4.4.3 Heteroskedasticity Test

The Breusch-Pagan test was used to determine whether there was heteroskedasticity. The null hypothesis is that the error terms are homoscedastic. The null hypothesis is rejected if the p-value is less than 0.05. Table 4.4 below displays the heteroscedasticity test findings.

Table 4. 4: Heteroscedasticity Test (Breusch-Pagan)

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Ho: Constant variance	
Variables: Fitted values of lnFDI	
chi2 (1)	= 0.22
Prob > chi2 =	0.6395

Source: Study Data

The findings in table 4.4 indicated a p-value of 0.6395, which is more than 0.05. Therefore, we failed to reject the null hypothesis and concluded the error term was homoscedastic.

4.5 Regression Results

Given that the estimated pooled ordinary least square (OLS) met the normality, multicollinearity and heteroscedasticity conditions, the researcher proceeded to estimate the fixed effects and random effects models. Fixed effects models control for unobserved individual heterogeneity while random effect models handle unobserved heterogeneity across entities in panel data but make different assumptions about the unobserved effects.

4.5.1 Hausman Test

The researcher used Hausman test to choose between the fixed effects and random effects . The hypotheses for the test were:

H_0 : Appropriate model is random effects

H_1 : Appropriate model is fixed effects.

The results revealed that the Hausman statistic was 15.94 with a p-value of 0.0857. Since the p-value is greater than 0.05 at 5% level of significance, we failed to reject null hypothesis and concluded that the random effects/pooled OLS models were appropriate and yielded consistency coefficients. The results for the three models proposed in chapter 3 are presented chapter 4.5 below

Table 4. 5: Estimated Regression Model Results

	Model 1	Model 2	Model 3
Variable	Pooled OLS coefficient (t values in brackets)	2SLS Coefficient (t values in brackets)	CFA coefficient (t values in brackets)
Exchange rate	-0.127**(2.30)	-0.421*** (4.06)	-0.261***(5.23)
Gross Domestic Product	.353*** (7.22)	0.347*** (6.34)	0.253*** (6.80)
Infrastructural Development	7.273**(2.44)	8.953***(5.62)	5.402*** (6.34)
Trade openness	0.076* (1.76)	0.163** (2.92)	0.183** (2.40)
Inflation	-0.002 *(-1.73)	-0.061* (1.82)	-0.055* (1.63)
Resource endowment	0.378***(5.36)	0.127**(3.85)	0.136** (3.22)
Ease of Doing Business	-0.146** (2.09)	-0.258** (3.38)	-2.268** (2.03)
Constant	4.447 *** (5.97)	4.601*** (5.30)	4.694*** (5.24)
EXR Residuals	-	-	0.283*** (6.85)
GDP Residuals	-	-	5.273*** (4.51)
Adjusted R ²	0.94	0.91	0.91
Number of Observations	132	132	132

*All the variables have been log transformed before analysis. The t-values are enclosed in parenthesis. ***, ** and * represents 1%, 5% and 10% level of significance, respectively.*

Table 4.5 above presents the estimated regression model results across three different specifications: Pooled Ordinary Least Squares (OLS), 2-Stage Least Squares (2SLS), and Control Function Approach (CFA). The results from the three models are fairly robust and reliable for most of the variables. Across all models, the coefficient for the exchange rate is negative, indicating a negative relationship with Foreign Direct Investment (FDI). The magnitude and significance levels vary between models. It appears highly significant in both the 2SLS and CFA models. The GDP coefficient is positive and highly significant in all models,

suggesting a positive relationship between GDP and FDI. However, the magnitude of the coefficient varies slightly across the models. Infrastructure development expenditure depicts a positive relationship with FDI across all models, and its coefficient is significant in all three specifications while resource endowment depicts a positive relationship with FDI in all models and is highly significant. However, the ease of doing business exhibits a negative relationship with FDI across all models and remains consistently significant.

In the CFA model, the residuals for exchange rates (EXR) and GDP are introduced as separate variables and are highly significant thus rejecting the null hypothesis of exogeneity. This is implying that there is endogeneity in the foreign direct investment model. Therefore, the findings suggest that there is simultaneous relationship of FDI with respect to exchange rate and GDP necessitating the use instrumental variable method. Therefore, the results from 2SLS and CFA are different from the pooled OLS since exchange rate and GDP are endogenous.

The study concludes that the investments from outside the East African Community is negatively impacted by the exchange rate. The study's findings are both consistent and inconsistent with prior research. Ahmad, Szczepankiewicz, Yonghong, et al. (2022) found that exchange rate, trade openness, and infrastructural development were significant determinants of FDI, which is in line with the findings of the present investigation. Similarly, Obuin (2020) found that GDP and gross capital formation were significant determinants of FDI in Uganda, which is consistent with the current study's findings. Also, Gizaw, Kefelegn, Minwuye, et al. (2023) revealed that favourable business regulations positively influence FDI inflows, leading to enhanced economic growth in these countries. However, Irakoze and Yu (2020) revealed that only trade openness was an importance determinant of FDI, which is also inconsistent with the current study, which found that other factors, such as infrastructural development, resource endowment, and easy business operations were important FDI criteria.

Moreover, Enu, Havi, and Obuin (2020) found significant relationships between FDI and exchange rate, trade openness, infrastructural development, gross capital formation, and human development index, which is consistent with the current study's findings for the exchange rate, GDP, infrastructural development, trade openness, and resource endowment. Ahmad, Szczepankiewicz, Yonghong, et al. (2022) showed significant relationships between FDI and exchange rate, GDP, inflation, interest rate, political stability, and trade openness, which is mostly consistent with the current study's findings for the exchange rate, GDP, and trade openness. However, Irakoze and Yu (2020) are inconsistent based on the findings of the present study. Also, Irakoze and Yu (2020) found that only trade openness, not GDP or human capital, was a key factor of FDI, which is inconsistent with the current study's findings for GDP and resource endowment.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND POLICY IMPLICATIONS

5.1 Introduction

This chapter summarizes the study findings, conclusion, and policy implications. The sections comprised a review of the study, findings, policy/practice implications, the study's addition to knowledge, and suggestions for future investigation.

5.2 Summary

The study sought to establish the relationship between macroeconomic factors and foreign direct investment in East African Community. The researcher formulated two specific objectives to help address the problem at hand. These two specifically included figuring out how exchange rates affected foreign direct investment in the East African Community and establishing if there is an endogeneity of exchange rate and GDP with respect to East African Community foreign direct investment.

The research estimated Pooled Panel Ordinary Least Square (OLS) to address the first objective. The impacts revealed that all independent variables (exchange rate, GDP, infrastructural development, trade openness, inflation, resource endowment, and ease of doing business), except inflation, have significant coefficients. The exchange rate had a negative coefficient, indicating that a drop in the exchange rate leads to a rise in the FDI. On the other hand, GDP, infrastructural development, trade openness, resource endowment, and ease of doing business have positive coefficients, demonstrating that a rise in these variables causes a rise in FDI.

The study's second goal was to determine whether there was an endogeneity of exchange rate and GDP with respect to investment from abroad in the East African Community. The study estimated the Instrumental Variable (IV) method and Control Function Approach (CFA).

The study established that FDI inversely related with the exchange rate and ease of doing business, implying that higher FDI might coincide with lower exchange rates and better business conditions. Lower exchange rates tend to make a country's goods and services cheaper for foreign investors, attracting more FDI inflow. A weaker exchange rate can stimulate export-oriented industries and make a country's goods more competitive in the global market, prompting increased investment. Additionally, when the ease of doing business improves, it signifies a more favourable business environment with reduced bureaucratic hurdles, streamlined regulations, and increased efficiency. Investors are more likely to flock to countries where they encounter fewer obstacles, administrative burdens, and where their investments are protected. Therefore, a negative correlation between FDI and the ease of doing business suggests that higher FDI levels coincide with better, more investor-friendly conditions.

Further FDI exhibited positive relationship with GDP, infrastructure, and resource endowment, suggesting that higher FDI aligns with increased GDP, better infrastructure, and richer resource endowment. When FDI and GDP are positively correlated, it signifies that higher levels of foreign investment coincide with increased economic output within a country. Foreign investments often bring in capital, technology, and expertise, contributing to economic growth and higher GDP figures.

Moreover, the positive relationship between FDI and infrastructure development suggests that foreign investors are attracted to regions or countries with better infrastructure. A well-developed infrastructure, including transportation, communication, and utilities, is crucial for businesses to operate efficiently, making such locations more appealing for foreign investments. Similarly, the positive relationship between FDI and resource endowment implies that regions or nations rich in natural resources tend to attract higher levels of foreign investment. Natural resources often represent opportunities for industries, energy production, or raw material extraction, which entice foreign investors. This study provides important

insights for policymakers and investors who seek to attract foreign investment in the EAC. By focusing on these factors (exchange rate, GDP, infrastructural development, trade openness, inflation, resource endowment, and ease of doing business), policymakers can generate an atmosphere that encourages international investment, which can result in regional economic expansion.

5.3 Conclusions

In conclusion, the goal of this study was to determine how macroeconomic variables and foreign direct investment (FDI) in the East African Community (EAC) relate to one another. Pooled panel ordinary least square (OLS) was employed in the investigation to address the first objective (to assess how exchange rates have an impact on FDI in the East African Community). The instrumental variable (IV) and control function approach (CFA) to address the second objective (to establish if there is the endogeneity of exchange rate and GDP with respect to investing abroad in the East African Community). The results of the study from pooled panel ordinary least square (OLS) revealed that several factors have an important effect on FDI flows in the EAC, including rate of exchange, GDP, infrastructural development, trade openness, resource endowment, and ease of doing business.

The study found that a decrease in exchange rate can reduce the cost of the host nation's assets for foreign investors, enhancing the competitiveness of its exports, and improving the competitiveness of its labour force. Meanwhile, an increase in GDP can signal greater economic stability and potential profitability for foreign investors. Infrastructural development, trade openness, and resource endowment can improve efficiency and access to markets, providing foreign investors with better investment opportunities. Finally, an increase in the ease of doing business can lead to better the foreign investors operations in the country, reducing costs and risks.

The results of the IV and CFA methods show that the coefficients for the exchange rate, GDP, infrastructural development, trade openness, resource endowment, and ease of doing business are significant, which provides more accurate coefficient estimates than the Pooled OLS. The study found that the adjusted R-squared value for the three models was above 90 percent, implying that these factors can explain more than 90 percent of the variations of the FDI in EAC.

5.4 Policy Implications

The study found that a rising levels of FDI in the East African Community (EAC), increases in response to decrease in the exchange rate. Thus, governments of EAC countries need to take steps to maintain a stable exchange rate to attract foreign investment. They can do this by implementing appropriate monetary policies, such as managing inflation and interest rates and avoiding excessive fluctuations in the exchange rate. Governments can also provide incentives for foreign investors, such as tax breaks or subsidies, to encourage them to invest in the area. Additionally, the research discovered that FDI in the EAC rises as GDP rises. Hence, EAC governments should focus on policies that promote economic growth and stability to attract foreign investment. This can be done by investing in infrastructure development, improving education and healthcare, and providing a favourable business environment. Governments can also work to reduce barriers to entry for foreign investors, such as simplifying regulatory frameworks and streamlining administrative procedures.

The study found that a rise in infrastructural development results to a rise in FDI in the EAC. It is recommended that the EAC governments should prioritize investments in transportation, telecommunications, and energy infrastructure to enhance supply chain effectiveness and eliminate payments of doing business. This can be done by implementing public-private partnerships or attracting foreign investment in infrastructure development. Governments can also develop policies that encourage private sector investment in infrastructure development.

Besides, the study established that greater trade openness causes more flow of FDI into the EAC. The research informs EAC governments to promote trade liberalization and regional integration to attract foreign investment. This can be done by reducing trade barriers, improving customs procedures, and harmonizing regulations. Governments can also develop policies that promote exports, such as providing export credits and developing export processing zones.

The study discovered that as more resources are endowed, it results to a rise in FDI in the EAC. Thus, EAC governments need to develop policies that promote sustainable resource management and responsible investment in resource-based industries. This can be done by regulating resource extraction, promoting local content development, and ensuring that resource revenues are used for economic development. Governments can also work to ensure that resource-based industries provide benefits to local communities and protect the environment.

The research revealed that a rise in ease of doing business leads to a boost in FDI in the EAC. Thus, EAC governments need to develop policies that improve the regulatory environment and reduce bureaucratic hurdles for foreign investors. This can be done by simplifying business registration procedures, improving transparency and accountability, and streamlining administrative procedures. Governments can also promote entrepreneurship and innovation to attract foreign investment in high-growth sectors.

5.5 Areas for Further Research

This study suggests that further research could be conducted in other regions such as COMESA, ECOWAS, and SADC, to compare the results obtained from this study with those obtained from other regions. This would allow for a greater comprehension of the variables influencing the FDI in different regions and help policymakers in East African countries to identify areas that require improvement. Additionally, conducting similar studies in other

regions would enable policymakers to gain knowledge from other nations' experiences, and adopt best practices to attract more FDI.

By conducting comparative studies across different regions, decision-makers can gain knowledge from the successes and failures of other nation attracting FDI. For instance, they can identify policies that have been effective in attracting FDI and adopt them while also avoiding policies that have failed in other countries. This could help improve the investment climate in East African Community countries and make them more attractive to foreign investors.

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APPENDICES

Appendix I: List of East African Community Countries

1. Burundi
2. Kenya
3. Rwanda
4. Tanzania
5. Uganda
6. DRC

Appendix II: Data Set

Year	Country	FDI (% of GDP)	EXR (local currency units to USD)	GDP (in USD Millions)	IFS(% of GDP)	TO (% of GDP)	INFL (Annual %)	REI ((% of GDP)	EDBS (Score)
2000	Burundi	1.3422	720.6733	\$870.49	0.0070	0.0522	24.43	15.0609	23.59
2001	Burundi	-0.0013	830.3533	\$876.79	0.0047	0.0526	9.30	18.8121	31.23
2002	Burundi	0.0026	930.7491	\$825.39	0.0045	0.0544	-1.37	24.3014	28.91
2003	Burundi	0.0039	1082.6200	\$784.65	0.0039	0.0558	10.65	40.4922	33.59
2004	Burundi	0.0049	1100.9000	\$915.26	0.0043	0.0574	8.18	30.4545	38.27
2005	Burundi	0.0523	1081.5771	\$1,117.11	0.0058	0.0602	13.25	26.6808	28.29
2006	Burundi	0.0025	1028.6836	\$1,273.38	0.0045	0.0618	2.75	23.9492	29.05
2007	Burundi	0.0369	1081.8696	\$1,356.20	0.0046	0.0644	8.41	32.3564	30.27
2008	Burundi	0.2378	1185.6908	\$1,611.84	0.0054	0.0626	24.41	33.0482	29.42
2009	Burundi	0.0196	1230.1792	\$1,781.46	0.0070	0.0618	10.56	30.3367	29.05
2010	Burundi	0.0384	1230.7483	\$2,032.14	0.0085	0.0656	6.49	23.8534	30.83
2011	Burundi	0.1501	1261.0734	\$2,235.82	0.0098	0.0690	9.59	24.9892	32.43
2012	Burundi	0.0259	1442.5056	\$2,333.34	0.0100	0.0714	18.16	17.5502	33.56
2013	Burundi	4.7613	1555.0908	\$2,451.61	0.0116	0.0742	7.94	17.7329	34.87
2014	Burundi	3.0212	1546.6866	\$2,705.78	0.0109	0.0750	4.41	17.4547	35.25
2015	Burundi	1.5987	1571.8983	\$3,104.00	0.0128	0.0754	5.54	15.5345	45.57
2016	Burundi	0.0021	1654.6267	\$2,644.49	0.0138	0.0911	5.56	19.1017	45.68
2017	Burundi	0.0116	1729.0551	\$2,723.59	0.0140	0.0812	16.05	18.5077	45.91
2018	Burundi	0.0369	1782.8768	\$2,667.18	0.0146	0.0862	-2.81	13.4318	46.48
2019	Burundi	0.0406	1845.6229	\$2,576.52	0.0140	0.0886	-0.69	13.1274	46.77
2020	Burundi	0.3292	1915.0461	\$2,649.68	0.0122	0.0926	7.32	13.8476	32.10
2021	Burundi	0.3579	1975.9509	\$2,775.80	0.0123	0.0926	8.40	13.9570	32.10
2000	DRC	0.4935	21.8183	\$19,088.05	0.0019	0.1876	13.91	7.5113	22.39
2001	DRC	1.3743	206.6175	\$7,438.19	0.0020	0.0247	19.94	18.4200	21.39
2002	DRC	2.1494	346.4850	\$8,728.04	0.0024	0.0852	31.52	18.8677	24.60
2003	DRC	4.3776	405.1782	\$8,937.57	0.0023	0.1550	12.87	29.5534	84.96
2004	DRC	3.9722	399.4758	\$10,297.48	0.0020	0.2783	3.99	24.0864	25.71
2005	DRC	1.5045	473.9080	\$11,964.48	0.0019	0.2606	21.32	23.7429	25.99
2006	DRC	1.7721	468.2788	\$14,451.90	0.0022	0.4858	13.05	24.0258	23.35
2007	DRC	10.8024	516.7499	\$16,737.07	0.0017	0.5144	16.95	25.7637	23.56
2008	DRC	8.7263	559.2925	\$19,788.52	0.0010	0.3659	17.30	28.4584	23.77
2009	DRC	-1.3041	809.7858	\$18,648.37	0.0009	0.1535	2.80	28.2618	23.22
2010	DRC	12.7160	905.9135	\$21,565.72	0.0008	0.1126	7.10	25.9609	23.22
2011	DRC	6.1766	919.4913	\$25,839.75	0.0008	0.1447	15.32	28.8830	18.08
2012	DRC	9.8669	919.7550	\$29,306.23	0.0006	0.1739	9.72	27.1230	25.17
2013	DRC	5.1946	919.5659	\$32,679.75	0.0005	0.2727	0.81	25.7462	26.14
2014	DRC	4.1760	925.2263	\$35,909.04	0.0005	0.2783	1.24	24.5569	24.03
2015	DRC	3.0743	925.9850	\$37,917.71	0.0006	0.1187	0.74	20.1094	34.36
2016	DRC	2.5108	1010.3027	\$37,134.80	0.0004	0.0715	2.89	20.5721	34.39
2017	DRC	2.7564	1464.4180	\$38,019.26	0.0005	0.0746	1.96	24.7657	34.57
2018	DRC	2.9590	1622.5236	\$47,568.21	0.0005	0.0554	9.82	18.4168	35.23
2019	DRC	2.6093	1647.7601	\$51,775.83	0.0041	0.0587	11.62	12.7501	36.21
2020	DRC	3.0751	1851.1222	\$48,716.96	0.0038	0.0460	9.23	15.9282	42.85

Year	Country	FDI (%) of GDP)	EXR (local currency units to USD)	GDP (in USD Millions)	IFS(% of GDP)	TO (% of GDP)	INFL (Annual %)	REI ((% of GDP)	EDBS (Score)
2021	DRC	3.0310	1989.3915	\$55,350.97	0.0051	0.0488	3.96	38.8273	42.85
2000	Kenya	0.8729	76.1755	\$12,705.35	0.1460	7.3226	9.98	3.3140	84.81
2001	Kenya	0.0408	78.5632	\$12,986.01	0.0183	0.0669	5.74	3.1416	31.44
2002	Kenya	0.2101	78.7491	\$13,147.74	0.0152	0.0364	1.96	3.7395	17.10
2003	Kenya	0.5484	75.9356	\$14,904.52	0.0126	0.0302	9.82	5.0854	14.17
2004	Kenya	0.2862	79.1739	\$16,095.34	0.0165	0.0522	11.62	4.1237	24.55
2005	Kenya	0.1132	75.5541	\$18,737.90	0.0151	0.0507	10.31	4.0769	23.81
2006	Kenya	0.1962	72.1008	\$25,825.51	0.0121	0.0623	14.45	2.9504	29.28
2007	Kenya	2.2812	67.3176	\$31,958.19	0.0121	0.0843	9.76	3.6339	39.60
2008	Kenya	0.2663	69.1753	\$35,895.15	0.0109	0.0762	26.24	3.6389	35.83
2009	Kenya	0.2745	77.3520	\$42,347.22	0.0087	0.0382	9.23	3.2457	17.96
2010	Kenya	0.3922	79.2332	\$45,405.61	0.0094	0.0626	3.96	2.6731	29.41
2011	Kenya	3.0947	88.8108	\$46,869.47	0.0068	0.0478	14.02	2.9432	22.48
2012	Kenya	2.4473	84.5296	\$56,396.71	0.0063	0.0455	9.38	2.9089	21.37
2013	Kenya	1.8142	86.1229	\$61,671.44	0.0059	0.0354	5.72	2.6694	16.63
2014	Kenya	1.2022	87.9222	\$68,285.80	0.0044	0.0297	6.88	2.6431	13.95
2015	Kenya	0.8838	98.1785	\$70,120.45	0.0041	0.0304	6.58	2.7097	58.01
2016	Kenya	0.6276	101.5044	\$74,815.14	0.0042	0.0383	6.30	2.6584	62.79
2017	Kenya	1.6408	103.4100	\$82,036.51	0.0039	0.0409	8.01	2.3144	65.41
2018	Kenya	0.8327	101.3016	\$92,202.98	0.0033	0.0367	4.69	1.3613	70.98
2019	Kenya	0.4682	101.9913	\$100,378.00	0.0028	0.0328	5.24	1.2272	73.22
2020	Kenya	0.4235	106.4508	\$100,658.00	0.0028	0.0268	5.40	1.2688	12.60
2021	Kenya	0.4224	109.6377	\$109,704.00	0.0025	0.0235	6.11	1.2279	11.03
2000	Rwanda	0.3915	389.6962	\$2,068.76	0.0282	0.0702	3.90	5.0350	32.99
2001	Rwanda	0.9407	442.9919	\$1,966.55	0.0273	0.0710	3.34	5.3751	33.37
2002	Rwanda	0.0763	475.3652	\$1,965.93	0.0239	0.0744	1.99	6.4378	34.97
2003	Rwanda	0.2198	537.6550	\$2,138.19	0.0231	0.0774	7.45	9.0768	36.38
2004	Rwanda	0.3240	577.4490	\$2,376.46	0.0300	0.0798	12.25	7.0204	37.51
2005	Rwanda	0.2713	557.8226	\$2,933.77	0.0244	0.0830	9.01	5.9570	39.01
2006	Rwanda	0.9231	551.7103	\$3,319.71	0.0269	0.0836	8.88	5.2965	39.29
2007	Rwanda	2.0215	546.9550	\$4,070.39	0.0276	0.0924	9.08	6.2257	43.43
2008	Rwanda	1.9748	546.8486	\$5,179.80	0.0337	0.1006	15.44	8.3058	47.28
2009	Rwanda	2.0913	568.2813	\$5,674.43	0.0290	0.1096	12.94	6.9354	51.51
2010	Rwanda	3.5299	583.1309	\$6,124.69	0.0286	0.1138	-0.25	6.4866	53.49
2011	Rwanda	1.6286	600.3065	\$6,884.91	0.0272	0.1174	3.08	6.9957	55.18
2012	Rwanda	3.5222	614.2952	\$7,654.78	0.0245	0.1224	10.27	6.3942	57.53
2013	Rwanda	2.9893	646.6360	\$7,820.05	0.0290	0.1298	5.92	6.5048	61.01
2014	Rwanda	3.8111	682.4378	\$8,239.04	0.0248	0.1320	2.35	6.4522	62.04
2015	Rwanda	1.8971	719.8596	\$8,543.87	0.0246	0.1360	2.53	5.7781	67.05
2016	Rwanda	3.2172	787.2515	\$8,695.32	0.0263	0.1341	7.17	5.9986	68.97
2017	Rwanda	2.9615	831.5543	\$9,252.83	0.0255	0.1426	8.28	6.0149	71.07
2018	Rwanda	3.8001	861.0934	\$9,636.51	0.0226	0.1540	-0.31	4.7139	75.37
2019	Rwanda	2.5435	899.3505	\$10,346.68	0.0192	0.1558	3.35	3.8171	76.48
2020	Rwanda	1.5002	943.2781	\$10,172.92	0.0190	0.1530	9.85	4.1048	71.89

Year	Country	FDI (%) of GDP)	EXR (local currency units to USD)	GDP (in USD Millions)	IFS(% of GDP)	TO (% of GDP)	INFL (Annual %)	REI ((% of GDP)	EDBS (Score)
2021	Rwanda	1.9167	988.6248	\$11,055.28	0.0169	0.1528	-0.39	4.0172	71.82
2000	Tanzania	3.4644	800.4085	\$13,375.98	0.0205	0.0654	5.92	3.7553	30.74
2001	Tanzania	4.0442	876.4117	\$13,581.64	0.0178	0.0678	5.15	4.0441	31.87
2002	Tanzania	2.7971	966.5828	\$14,142.03	0.0172	0.0696	5.32	4.8575	32.71
2003	Tanzania	2.0914	1038.4191	\$15,224.26	0.0161	0.0714	5.30	6.8627	33.56
2004	Tanzania	2.6538	1089.3347	\$16,675.95	0.0162	0.0732	4.74	5.3543	34.40
2005	Tanzania	5.0846	1128.9342	\$18,399.05	0.0167	0.0768	5.03	4.9936	36.10
2006	Tanzania	2.1611	1251.9000	\$18,649.59	0.0141	0.0792	7.25	5.5220	37.22
2007	Tanzania	2.6622	1245.0355	\$21,843.53	0.0143	0.0818	7.03	6.2061	38.45
2008	Tanzania	4.9470	1196.3107	\$27,961.53	0.0141	0.0864	10.28	5.0766	40.61
2009	Tanzania	3.2757	1320.3120	\$29,081.83	0.0161	0.0868	12.14	5.5363	40.80
2010	Tanzania	5.6637	1395.6250	\$32,014.25	0.0127	0.0892	6.20	5.5595	41.92
2011	Tanzania	3.5472	1557.4333	\$34,657.14	0.0126	0.0948	12.69	7.3365	44.56
2012	Tanzania	4.5388	1571.6984	\$39,650.52	0.0118	0.0982	16.00	6.8325	46.15
2013	Tanzania	4.5693	1597.5558	\$45,680.53	0.0113	0.1014	7.87	5.7672	47.66
2014	Tanzania	2.8342	1653.2308	\$49,964.83	0.0108	0.1042	6.13	5.0469	48.97
2015	Tanzania	3.1787	1991.3909	\$47,378.60	0.0104	0.1070	5.59	5.3019	49.69
2016	Tanzania	1.7359	2177.0867	\$49,774.01	0.0086	0.1098	5.17	5.6160	53.87
2017	Tanzania	1.7601	2228.8567	\$53,275.97	0.0082	0.1130	5.32	5.1362	53.98
2018	Tanzania	1.7044	2263.7817	\$57,003.69	0.0082	0.1150	3.49	3.6116	54.29
2019	Tanzania	1.9946	2288.2068	\$61,026.77	0.0081	0.1146	3.46	3.5315	54.46
2020	Tanzania	1.0366	2294.1462	\$66,068.74	0.0075	0.1090	3.29	3.8517	51.23
2021	Tanzania	1.4619	2297.7642	\$70,655.63	0.0068	0.1056	3.69	6.6937	49.63
2000	Uganda	2.5948	1644.4753	\$6,193.25	0.0073	0.2580	3.39	12.0494	81.26
2001	Uganda	2.5939	1755.6587	\$5,840.50	0.0070	0.2520	1.87	12.4644	88.44
2002	Uganda	2.9885	1797.5505	\$6,178.56	0.0050	3.2580	-0.29	14.2481	82.26
2003	Uganda	3.0603	1963.7201	\$6,606.88	0.0047	0.2400	8.68	20.8852	82.80
2004	Uganda	3.7209	1810.3047	\$7,939.49	0.0051	0.2340	3.72	15.1926	72.98
2005	Uganda	4.1108	1780.5403	\$9,239.22	0.0050	0.2360	8.45	13.9240	70.92
2006	Uganda	6.4571	1831.4519	\$9,977.65	0.0041	0.2380	7.31	13.2520	61.86
2007	Uganda	6.6566	1723.4916	\$11,902.56	0.0044	0.2320	6.14	16.1641	59.04
2008	Uganda	5.0474	1720.4438	\$14,440.40	0.0044	0.2520	12.05	16.4380	58.44
2009	Uganda	3.3492	2030.4880	\$25,127.80	0.0048	0.2540	13.02	9.4625	59.38
2010	Uganda	2.0390	2177.5576	\$26,673.44	0.0051	0.2540	3.98	8.1023	59.38
2011	Uganda	3.2086	2522.8020	\$27,871.73	0.0054	0.2460	16.56	9.1562	55.62
2012	Uganda	4.4144	2504.5630	\$27,305.92	0.0055	1.2420	12.68	10.6586	63.74
2013	Uganda	3.7903	2586.8896	\$28,915.79	0.0054	0.2400	4.91	10.6586	62.80
2014	Uganda	3.2459	2599.7881	\$32,612.40	0.0055	0.8560	3.08	10.3312	80.32
2015	Uganda	2.2776	3240.6455	\$32,387.18	0.0063	0.2460	5.59	10.7948	56.63
2016	Uganda	2.1425	3420.0979	\$29,203.99	0.0075	0.2440	5.71	12.7337	57.29
2017	Uganda	2.6109	3611.2244	\$30,744.47	0.0073	0.2300	5.21	12.1305	57.87
2018	Uganda	3.2051	3727.0691	\$32,927.03	0.0068	0.0244	2.62	8.3889	58.39
2019	Uganda	3.6030	3704.0491	\$35,348.16	0.0074	0.2320	2.87	7.3883	59.98
2020	Uganda	2.3235	3718.2490	\$37,605.43	0.0080	0.2320	3.31	7.5635	54.40

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2021	Uganda	2.7165	3587.0518	\$40,510.24	0.0072	0.9300	2.20	7.4755	54.70

Key: TO=trade openness, IFS=infrastructure development, GDP=Gross Domestic Product, INFL =inflation,
and EXR=exchange rate, REI= Resource Endowment Index, EDBS= Ease of Doing Business Score

