ECONOMIC INTEGRATION AND PRIVATE INVESTMENT: A Case Study of the East African Community (EAC)

BY

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DECLARATION

I, TIBIHIKA Amon, affirm that this dissertation titled **"Economic Integration and Private Investment: A Case Study of the East African Community (EAC)."** is entirely my original work. I additionally verify that I have appropriately acknowledged all the sources I have consulted or cited.

Name of the author : TIBIHIKA AMON

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DECLARATION BY SUPERVISORS

I, Geoffrey Norman TUMWINE (PhD), affirm that the candidate completed the work in this Dissertation under my guidance.

……..… ……

Signature Date

I, Nathan Francis OKURUT (Prof) affirm that the candidate completed the work in this Dissertation under my guidance.

……..… ……

Signature Date

DEDICATION

I offer this dissertation as a dedication to the Divine Creator and the following individuals, whose unwavering love, support, and encouragement have been invaluable throughout my academic journey: To my beloved wife Nahurira Evas and our children Andinda Nimurungi and Linda Nibirungi, my brother Dedrix Bindeeba Stephenson and his wife Susan Atuhaire, Rev. Aggrey Aijuka, Sharon Mbabazi, and Rev. Frank Kiconco. The affection, selflessness, and steadfast faith you have shown me have profoundly influenced the person I have become.

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LIST OF ACRONYMS

EAC CU:	East African Community Customs Union.
SAPs:	Structural Adjustment Programs
EAC:	East African Community
NAFTA:	North Atlantic Free Trade Agreement
UNCTAD:	United Nations Conference on Trade and Development
SSA:	Sub-Saharan Africa
RTAs	Sub-Regional Trade Agreements
R&D:	Research and Development
GMM:	Generalized Method of Moments.
VAR:	Vector Autoregressive
ARDL:	Autoregressive Distributed Lag
SMEs:	Small and Medium-Sized businesses
ADF:	Augmented Dickey-Fuller
VEC:	Vector Error Correction
GDP:	Growth Domestic Product.
CPI:	Corruption Perceptions Index
IPS:	Im Pesaran and Shin
EU:	European Union
WBDI:	World Bank Development Indicators
SACU:	South African Customs Union
RE:	Random Effects.

FE:	Fixed Effects
PPPs:	Public-Private Partnerships
TPU:	Trade Policy Uncertainty
NCIP:	The Northern Corridor Integration Projects

ABSTRACT

Economic integration necessitates the removal of trade barriers within the union, as well as the imposition of common trade barriers. All this has been linked to potential GDP growth and growth in private investment (Martin-Mayoral et al., 2016). Therefore, this study conducts an empirical examination of the impact of Economic integration on Private investment in the East African Community in 5 selected partner countries. Additionally, it aims to examine the effect of some selected macroeconomic variables, such as taxes, inflation, domestic credit, and real interest rate on Private Investment in the EAC member states.

The research utilizes panel data obtained from secondary sources covering a period of 1990 to 2021 in five partner nations of the East African Community. The primary source of data for this study was the World Bank Development Indicators database.

The study extends the investment model by Jorgenson (1967) which is based on the assumption that firms aim to maximize their profits by choosing the optimal level of investment that balances the expected returns on investment with the cost of capital. And Regional economic integration theory by (Viner, 2014) argues that the drive for regional integration goes beyond just the elimination of tariff barriers. Analytically, the panel data technique of fixed effects is used for the empirical analysis as guided by the Hausman Test.

Economic integration was found to have a positive and significant effect on private investment at 1 percent level of significance in the EAC region. The coefficient of Economic integration means that when Countries join EAC, they are predicted to register higher private investments of about 13 percent more than before joining keeping other factors constant. In addition, Inflation had a positive and significant effect on private investment. In contrast, real interest rates had a negative effect, though significant effect on Private investment. However, credit and taxes had no significant effect on private investment. Based on these facts, the report suggests that East African Community (EAC) members should encourage more member Countries to join the (EAC). If Countries join resources, they are able to have a conducive environment for private investment. EAC Members should also establish a united East African Development Bank that can provide credit to private investors at very low-interest rates as is the case with developed Countries. Central Banks should adopt appropriate monetary policies to keep inflation moderate.

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study.

Private investment plays a crucial role in fostering economic growth and development in most economies (Mallick et al., 2018). It serves as a cornerstone for embracing novel innovations, generating employment opportunities, boosting incomes, and enhancing people's living standards. By facilitating private investment, poverty can be reduced as well (Mose and Keino, 2017). The main problem most developing economies face is that they have lower levels of private investment than industrialized nations due to high-interest rates, tariff barriers, and high inflation (Saputra and Fauzi., 2022). Other causes include among others; lack of access to domestic credit for investment (Kilindo, 2017). These macroeconomic problems discourage and impede developing nations' investment and output growth (Mose et al., 2021).

The growth of economic integration presents avenues for addressing common macroeconomic challenges, including enhancing macroeconomic policies and attracting private and foreign investments, ensuring that trade liberalization, inflation, price stability, interest rates, and factors of production movement reflect economic fundamentals and yield positive results (MasceSlluti, 2015).

Policy experts have also raised expectations for economic integration programs in developing countries as a means of stimulating economic growth, alleviating poverty, and benefiting from globalization through investment and trade (Martin-Mayoral et al., 2016). The economic integration theory in fostering private investment is, therefore, not new development (Woolcock, 2019), for example; the European Union (EU) is a successful example of economic integration in terms of private investment. The EU has created a common market that has enabled investors to invest and trade within the region. The EU's trade and investment policy has also been effective in promoting sustainable development by including provisions for environmental and social standards in trade agreements (Ruta, 2022).

From 2010 to 2020, Europe is leading in terms of private investment stocks in the world with 35 percent or more of all inward investment flows. The benefits of partner states include access to the common market that enables European private firms to be increasingly inseparable, propelling the

EU to the forefront of regional trade and investment. The EU, in particular, accounts for approximately 80% of all European private investment by 2020. The European Union continues to be Europe's leading source of private investment, with EU investors completing the vast majority of private investment projects each year (Giroud and Ivarsson, 2020).

The "Four Asian Tigers" are another thriving economic integration in boosting private investment. The term "Four Asian Tigers" refers to four Asian economies: Taiwan, Hong Kong, Singapore, and South Korea (Jia and Chao, 2016). Through international trade and the active manufacturing sector, these nations have achieved massive rates of GDP growth and are currently members of the highly developed nations in the whole world. Between 1960 and 1995, the four countries' average GDP was around 60% per year, consistently raising their economic growth. This consistency is the reason behind their transformation into newly industrialized economies and, eventually, fully developed nations (Chang et al., 2019). The Four Countries nations joined economy claimed 3.46% of the global economy and $2,932 billion in GDP. In 2018, the GDP of Hong Kong, Singapore, South Korea, and Taiwan stood at 363.03 billion, 361.1 billion, 1,619.42 billion, and 589.39 US dollars, indicating 0.428%,0.426%,1.911%, and 0.696% of the world economy, respectively. During the 2010s, their joint GDP growth was 3.34% greater than the world economy. According to the IMF, the GDP per capita (nominal) of each country is likely to exceed $30,000 by 2024 (IMF, 2022).

In their policies, the Tigers showed that they were willing to join hands with the private sector while making sure that monetary policy, and interest rates reflected economic fundamentals and yielded positive returns (Toma, 2019). They controlled inflation while allowing for sufficient income flexibility to stimulate both public and private investment. This allowed for quick strategy adaptation in response to changing circumstances with little resistance. The other factor was efficient management structures, which enabled to make and apply investment policies (Hauge, 2019). The Asian Tigers kept the currency from becoming overvalued, and exports received duty exemptions as well as credit for investment (Mascelluti, 2015).

Private sector investment has also increased between Southern African Custom Union (SACU) countries (Arndt and Roberts, 2018). SACU's members include South Africa, Botswana, Eswatini (Swaziland), Lesotho, and Namibia. As of 2018, the members of SACU stood at 24% of SSA’s GDP.

Concerning international trade, members of SACU claimed 36% of SSA's imports and 32% of its exports. Exports and imports were more than 20% of SSA GDP, and SACU had more ratios, at 29% and 35%, respectively. This indicates the impact of the SACU on investment and trade (Ferreira et al., 2022). They also formed a common customs regime for external goods into SACU countries. The common revenue pool receives all the revenues collected in the customs union and this revenue is eventually shared among the member countries (Vorisek and Yu, 2020).

Economic integration benefits include, among other things, increased trade, large-scale production, and high investment creating more jobs and division of labor, and higher bargaining power, which eventually leads to stability in macro-economic factors such as exchange rates, inflation, interest rates, financial sustainability, and efficient operation of factors of production (Albassam, 2020). Furthermore, regional integration encourages specialization and learning by doing; and assists in attracting private and foreign investment in partner countries. Private investment in many developing countries is beginning to have an impact on many economies than in previous periods before the 1970s; this is primarily due to SAPs and economic integration, which are associated with improving the efficiency of investments in the private sector (Umulisa and Habimana, 2018).

Similarly, the idea behind forming East African economic integration is to achieve economic and human development. Higher competition, Quality improvement in production, trade & investment raise people's living standards (Ogola et al., 2015). It is worth noting that tariff rates between Uganda and Tanzania, as well as Kenya and other partner countries, were set at zero percent in 2005. In 2010, all tariffs on imports and exports were removed (Umulisa, 2020).

Ever since the EAC economic integration was created in 2005, trade within the member countries has improved from 7.8% in 2005 to 11.4 % in 2011(Stevens and Newenham-Kahindi, 2017). However, there is no empirical evidence to show whether EAC is the one contributing to this improvement. In contrast, the execution of the EAC Customs Union has seen member countries experiencing fluctuations in volumes of goods and services, trade and private investment inflows within the region due to unpredictable changes in macro-economic factors similar to taxes on imports and exports, inflation, capital for investment, and efficiency within the economies causing inconsistency in GDP growth in the member countries (Baruti, 2017). For example, stocks of private investment fell from 13% to 8% between 1980 and 1990 and it has been fluctuating over

time according to Mose et al. (2021). Total investment in EAC fell by 46.29%, from US$11.64 billion in 2019 to US$6.25 billion in 2020. Kenya reduced by 24.63% to US$917.93 million; in 2020, Tanzania experienced a significant decline of 71.25% to reach US$754.59 million, while Uganda witnessed an improvement of 16.57% to reach US$1,445.48 million. Additionally, it is worth mentioning that the number of employment opportunities resulting from investment inflows within the EAC union decreased by 72.5% in 2020, reaching 58,017 opportunities compared to 211,084 in 2019 (East African Community Report, 2020).

Total trade within the EAC region, which serves as a critical component of private investment, experienced a 6.08% reduction, reaching US$51,915 million in 2020, compared to the higher value of US$55,278.2 million recorded in 2019. However, during the same period, EAC exports showed a positive growth of 3.15%, amounting to US$16,257 million, a notable increase from the US$15,760.8 million in 2019. Conversely, EAC exports declined by 7.37%, and imports decreased by 9.77%, falling to US$35.7 million in 2020 from the previous US$39.5 million in 2019. In terms of trade between the seven member countries, there was a steady rise from 13% in 2019, valued at $7.1 billion, to 15% in 2021, amounting to $9.5 billion. By 2022, the trade value further increased to $10.17 billion, accounting for 20% of the world's trade (Mmari et al., 2022).

During the period spanning from 1991 to 2015, private investment growth within the EAC experienced stagnation, largely attributed to fluctuations in trade inflows within the union (Mose and Keino, 2017). This emphasizes the need to thoroughly assess the contribution of economic integration to the private investments of member countries.

1.1 Problem statement

The majority of studies conducted on the impact of East African Economic Integration on Private Investment have utilized trade openness as a substitute for East African Economic Integration (Mose and Keino, 2017; Kiprop et al. 2018; Mose et l. 2021). However, this study employed a dummy variable to represent East African Economic Integration due to its ability to account for time-invariant factors that may influence the outcome variable (Wooldridge, 2010). Additionally, the use of dummy variables allows for the examination of diverse effects across different groups or entities (Baltagi et al., 2008). Furthermore, prior studies that integrated macroeconomic variables as determinants of private investment (Bonga, 2017; Kilindo, 2017; Agu, 2015; Dhaneshwar Ghura and Barry Goodwin, 2010) have yielded inconclusive and mixed results. Therefore, this study seeks to establish the impact of East African Economic Integration, alongside other macroeconomic variables such as taxes, inflation, access to credit, and real interest rate. As a result of the aforementioned existing gaps hence a need for this study.

1.2 Objectives of the Study

1.2.1 General objective

To assess the determinants of Private investment in the EAC member states.

1.2.2 Specific Objectives

1. To analyze the effect of East African Economic integration on Private investment in the EAC member states.

2. To examine the effect of some selected macroeconomic variables, such as taxes, inflation, domestic credit, and real interest rate on Private Investment in the EAC member states.

1.2.3 Hypotheses

1. There is no effect of East African Economic integration on private investment in the EAC member states.

2. Selected macroeconomic factors such as taxes, inflation, domestic credit, and real interest rate have no effect on Private Investment in EAC member states.

1.2.4 The Significance of the Study

The majority of previous research has focused on the impact of economic integration on tax revenue see (Babyenda, 2014), government expenditure, and GDP growth using openness to

represent economic integration, whereas others have done factors influencing private investment in a single nation or a set of nations using fiscal deficit and public investment as some of the factors influencing private investment, for example, see (Mose et al, 2021; Chaudhry and Munir, 2010; Kilindo, 2017). Others like (Bonga and Nyoni, 2017) employed time series data in their analysis.

Unlike already done works by different scholars, the current study investigates the impact of EAC economic integration on private investment of the union members prior and after the implementation of the union using five East African countries (Uganda, Tanzania, Kenya, Rwanda, and Burundi). This comprehensive analysis aims to uncover potential significant benefits associated with economic integration. Due to limited data availability, South Sudan and Congo, which have recently become members, have been excluded. The study also uses panel data analysis since it enables the control for individual-specific heterogeneity and it allows for the examination of changes within individual units over time, providing a more comprehensive understanding of the relationships between variables (Hsiao, 2022). Furthermore, a dummy variable is incorporated to account for economic integration, thereby highlighting the impact of East African economic integration on private investment both prior to and subsequent to the implementation of regional integration.

The findings of this research could assist policymakers formulate new investment ideas and guidelines that can yield better achievements beyond customs union for example; union market, monetary union, and, eventually, political union since one of the major constraints to private investment growth among the member states is unclear tariff and non-tariff policies (Saputra and Fauzi, 2022).

This study is due given the current effort in the EAC partner states to harmonize private investment policies, reform tariff policies, reduce the cost of operating private investment, create employment opportunities for the poor, efficient budgeting, and motivating private investors. This is due to the fact that harmonization of private investment policies in EAC member countries will encourage competitiveness, job creation, and utilization of public scarce resources within the economies that ultimately encourages private investment and easy interaction of factors of production.

1.3.5 Scope of the study

This study spans the years 1990 to 2021 due to a number of factors, including data availability and completeness. This data set contains more observations and spans more recent years than

previous works, and the span is so sufficient to detect the impact of EAC economic integration on member private investment in addition to the responsiveness of private investment. During this time, the EAC member countries also had the opportunity to develop new private investment policies. The study period encompasses both the time before and after EAC's re-formation. As a result, these dataset characteristics exhibit greater variation across member states and time, resulting in higher accuracy of the analyzed predictors leading to solid and dependable policy options. Panel data was employed, which offers the advantage of capturing variations in variables at the unit of observation.

This study majorly focused on assessing the impact of EAC economic integration on private investment in member countries and establishing other factors influencing private investment in EAC member countries, though the study will also yield policy options built on the study's results and areas for more studies.

The study's geographical range includes Uganda, Kenya, Burundi, Rwanda, and Tanzania. The data was derived from World Bank Development Indicators. The data used balanced strategies of estimating panel data and STATA software for analysis.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section encompasses a comprehensive theoretical and empirical review of relevant literature, contributing to a deeper comprehension of the existing research regarding the influence of EAC economic integration on private investment and the factors that shape private investment within the region, the history of the East African Community, Demographic features of the member states, and Conceptual framework. This will provide a foundation for research, enabling the researcher to identify research gaps and develop hypotheses to test in the study.

The History of the East African Community (EAC)

The history of the East African Community has its roots dating to the early twentieth century. The East African customs Union, which joined the three first countries (Uganda, Tanzania, and Kenya), took the initial initiative towards formation of economic integration in East Africa in 1917. However, because of different political and economic challenges, this initial move to unify these nations was short lived and disintegrated in the 1920s (Masind et al., 2017).

The EAC's contemporary history began in 1990, with the founder members signing the treaty forming the East African Community. The treaty aimed at bringing back economic integration efforts. The EAC has since then expanded to admit other new member countries such as Rwanda, Burundi, and South Sudan. The Union has registered tremendous success in a variety of integration areas, including trade, infrastructure development, and collaboration in fields such as health and education. Currently, the East African Community is a symbol of the region's dedication to unity, cooperation, and common development goals (Omolo et al., 2017).

The development of a common market is one major achievement of the EAC Union. The EAC Common Market Protocol, signed in 2020, encourages the free movement of commodities, services, capital, and people among member countries. As a result, international trade between the member countries and private investment has expanded. Intra-EAC Commerce increased from $ 2.5 billion in 2005 to $ 5.8 billion in 2019, demonstrating the positive impact of the common market on regional trade. In addition, the EAC has implemented a number of steps to integrate

trade regulations, simplify customs procedures, and decreases non-tariff barriers, there by encouraging a favorable business and investment climate (World Bank, 2021).

Furthermore, the EAC member states have collaborated to develop and improve regional infrastructure. For instance, the Northern Corridor Integration Projects (NCIP) aims to enhance transport connectivity and reduce the cost of doing business within the region. Under this initiative, significant progress has been made in upgrading and expanding road networks, railways, and ports, including the Standard Gauge Railway (SGR) project connecting Kenya and Uganda. These infrastructure improvements are vital for promoting regional trade and facilitating economic growth (African Development Bank, 2021).

Furthermore, EAC member countries have worked together to construct and upgrade regional infrastructure. The Northern Corridor Integration Projects (NCIP), for example aim to improve transportation connections and lower the cost of doing business in the region. Significant progress has been achieved under this program in updating and developing road networks, trains, and ports, including the Standard Gauge Railway project connecting Kenya and Uganda. These infrastructure improvements are crucial for facilitating regional commerce and economic growth (African Development Bank, 2021).

Table 1: Topography, Area, Population, Official Language, Infrastructure, and Road Coverage.

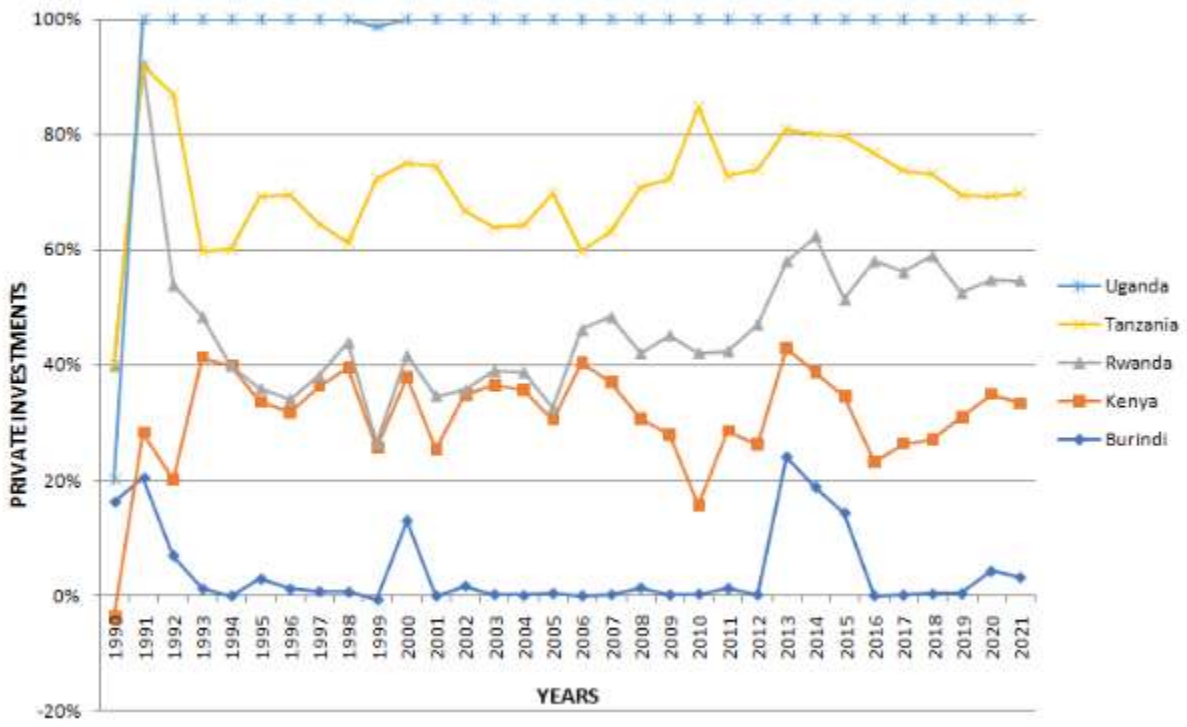
Country	Topography	Area (KM)	Population	Official Language(s)	Infrastructure	Road Coverage
Burundi	Mostly hilly and mountainous	27,834	Approximately 11 million	Kirundi, French, English	Developing, limited in some areas	Paved: 6.4%
Tanzania	Diverse, includes coastal plains, highlands, and mountains	945,087	Approximately 60 million	Swahili, English	Developing, varies across regions	Paved: 9.7%
Kenya	Diverse, includes coastal plains, highlands, and mountains	580,367	Approximately 53 million	Swahili, English	Well-developed, particularly in urban areas	Paved: 15.1%
Uganda	Mostly plateau with some mountains	241,551	Approximately 46 million	English, Swahili	Developing, limited in rural areas	Paved: 6.4%
Rwanda	Mountainous with some savannahs	26,338	Approximately 13 million	Kinyarwanda, English, French	Developing, focus on infrastructure improvement	Paved: 7.2%

Source: (COMESA)

Most Countries with in the East African Community (EAC) are embracing the use of Kiswahili language to ease trade. Topography and area can provide insights into the geographical characteristics that may influence investment patterns and distribution, while population data helps to gauge the market size and potential consumer base. Official language data is crucial for understanding communication and business facilitation within the integrated region. Additionally, infrastructure and road coverage are crucial indicators of the ease of doing business and

transportation efficiency, both of which directly impact private investment decisions. By examining these factors, the research aims to shed light on how EAC regional integration affects private sector investments, fostering a deeper understanding of the role of economic integration in promoting cross-border investments and fostering regional economic growth (African Development Bank., 2021).

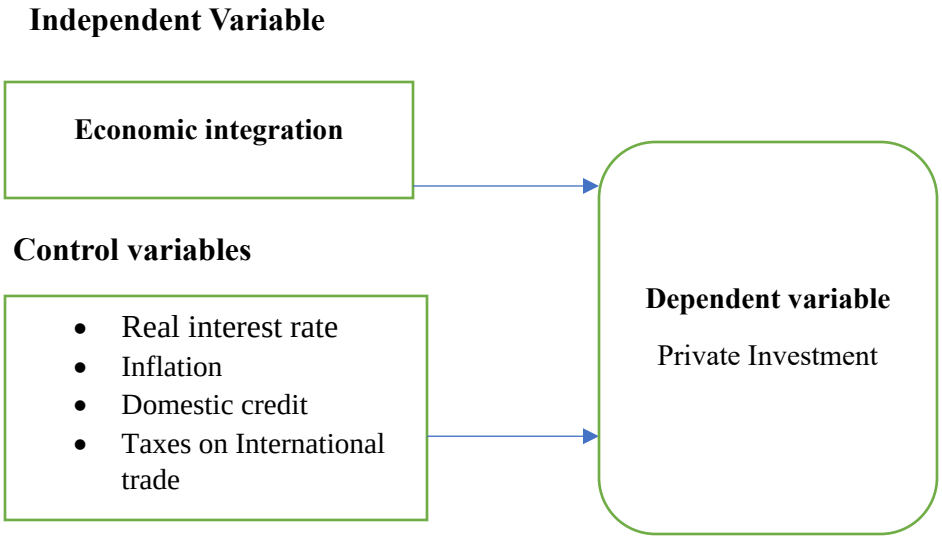
Figure 1: Trend Analysis for EAC Private Investment from 1990 to 2021



Source: World Bank (2021)

From the figure above, Uganda registered the highest level of private investment followed by Tanzania, Rwanda, and Kenya. Burundi registered the lowest levels of private investment because it has faced significant challenges in attracting private investment due to various factors, including political instabilities and economic uncertainties. The country's political situation has been a major concern for potential investors, as it has experienced periods of unrest, political violence, and human rights issues.

Conceptual Framework



Source: Author's

The above conceptual framework illustrates the causal connection between private investment as the dependent variable and EAC economic integration as an independent variable plus other macro-economic variables that affect Private Investment such as, Inflation, Domestic credit, Real interest rate, and Taxes on International trade.

2.1 Theoretical Literature

Economic integration agreements can come in different forms and dimensions, and they can vary in their level of economic and political integration. The North Atlantic Free Trade Agreement (NAFTA) is an example of a free trade agreement, which aims to remove barriers to trade and investment between its member countries (Canada, Mexico, and the United States). NAFTA does not require its members to harmonize their policies or regulations beyond what is necessary to facilitate trade.

The East African Community (EAC) is an example of a customs union that goes beyond the elimination of trade obstacles by adopting a shared external tariff on imports from non-member nations. The EAC also works to harmonize rules and regulations across multiple domains, including trade, investment, and infrastructure development. Also, the EAC has established a common market protocol, allowing for the free passage of products, services, capital, and people inside the union (Jambo and Sundjo, 2021).

Jorgenson's (1967) neoclassical model acts as the foundation for the dynamics of private investment. The neoclassical model is built on the facts that firms are motivated to gain more profits by selecting the appropriate level of investment that matches the likely outcomes from investment with the capital expenditure. In this model, the production function provides a link between the output realized and the inputs of labor and capital services which is a key element of investment choices (Jorgenson, 1967).

Capital services are provided by firms through the acquisition of factor inputs. In the neoclassical investment model, firms provide capital services by purchasing investment products, such as machinery and equipment, which they use to produce output.

The demand for capital is derived from the firm's demand for the output it intends to produce. In neoclassical models, such as the Cobb-Douglas production function (Equation 1), the anticipated capital stock is directly associated with the production level (Y^e) and indirectly linked to the expected rental cost of capital (C). The production function can be expressed as:

$K = \alpha Y_t^e C_t^{-1}$……...1

Where α is the distribution factor. The cost of capital is determined by three factors, which are as follows: (Equation 1). The interest rate, the firm's earnings if it dealt capital goods and the earnings RPk_t; $r\ and\ Pk_t$ capitalized, and they respectively indicate the nominal bank lending rate and capital goods costs.

The second component is capital goods depreciation, which is evaluated using δPk_t where $\delta$the rate of depreciation. The gain or loss resulting from anticipated variations in the price of capita is

$\Delta Pk_t = \pi_t^e\, Pk_t$ ……2

Where π_t^e represents the anticipated change in the price of capital goods, and these values are adjusted for the general price level (P) to convert them into real terms.

$C_t = Pk_t\, {(r + \delta + \pi_t^e)}/{P}$ ……3

The gross private investment in Equation 4 is:

$I_{i,t} = \Delta K_{i,t} + \delta K_{i,t-1}$ ……4

In Equation 4, private investment is depicted as comprising net and substitute components. While the stock of real capital may not immediately align with the expected level in the short run, Equation 4 represents a lagged investment function with an adjustment coefficient, as shown in Equation 5.

$$I_{i,t} = (1 - (1 - \delta)L_j\beta^*_{i,t} + (1 - \beta)I_{i,t-1} \quad \ldots\ldots\ldots 5$$

The adjustment coefficient β in Equation 5 is the lagging operator.
In the long run, firms engage in investment activities aimed at aligning their anticipated capital stock with their expected investment. This is accomplished through a distributed lag of adjustments made to the intended capital stock, as follows:

$$I_t = \Sigma^J_{j=0}\beta_j \Delta K^*_{t-J} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 6$$

We find that private investment depends on the cost of capital, output, and the adjustment coefficient when we substitute the desired capital stock from Equation (1) into Equation (6).

$$I_t = \Sigma^J_{j=0}\beta_J \Delta(\alpha Y^e_{t-J} C^{-1}_{t-j}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 7$$

According to theoretical literature, $\beta_J$is typically determined by economic factors that impact private investors' ability to achieve the expected level of investment. Jorgenson's investment model assumes a perfect financial market with a limited supply of capital for firms. According to this framework, capita user cost critically influences private investment.

Economic Integration Theory

The drive for economic integration goes beyond just the elimination of tariff barriers. It also involves the removal of non-tariff barriers to trade, such as technical barriers to trade, regulatory barriers, and other forms of barriers that impede the free flow of goods and services across borders. The rationale behind economic integration also extends beyond just the economic benefits. There are also political and social benefits that can be derived from closer economic ties between countries in a region. These benefits include increased political stability, improved security, and stronger cultural ties between member countries (Viner, 2014).

Additionally, economic integration can also lead to increased competitiveness for member countries, as they can pool their resources and take advantage of economies of scale in production.

This can lead to increased productivity, lower costs, and ultimately, increased investment and economic growth for the region as a whole (Viner, 2014)

2.2 Empirical Literature

The impact of EAC economic integration on private investment of the member states.

The Asian Tigers have played a big role towards global private investment, commerce, and production. These nations have achieved high levels of economic growth and development because of their competitive advantages, for example skilled labor and modern technology. These nations have inspired many other developing nations seeking to attain the same levels of growth and development (Bozkurt and Karaköy, 2022).

Globally, Europe is leading in terms of private investment stocks from 2010 to 2020, making more than 35% (UNCTAD). Europe has achieved this because of its big market size Europe has achieved this because of its big market size and stable macro-economic environment. In 2020, the European Union alone claimed roughly 80% of the total European private investment stocks and it is also a head in terms of private investment sources in the whole Europe. EU private investors every year establish new investments motivated by the desire to diversify their portfolios and utilize the region's strong economic growth potential (Giroud and Ivarsson, 2020). Generally, European Union's big hand in private investment stock is a model to many developing countries' private investors and provides the benefits of forming an economic Union.

European Union has also gone ahead to admit other new members (Ukraine, Moldova, and Georgia). This has increased its strength in terms of private investment inflows. By 2021, the EU was claiming for 52% of Moldova's total trade, 39% of Ukraine's, and 225 OF Georgia's. Prior to the war, Ukraine had over 60% of the EU's private investment stocks in the region (Dorakh, 2022). The recent wars are hoped to cement these ties, while EU admission has the potential to encourage private investment revival and macroeconomic stability through capital given to private investors, low interest rates, low inflation, and tax holidays (Ruta, 2022).

Mose et al. (2021) examined the influence of East African Community (EAC) economic integration on private investment within EAC member states, considering the prevailing reliance on state-owned investments in the region. The study employed the panel least squares technique and assumed random effects to estimate the private investment model in EAC member states from

1981 to 2015. The study's findings indicate that EAC regional integration significantly and positively impacts the accumulation of private investment, with a 5% level of significance. This impact is primarily attributed to the involvement of third-country investors who are not currently part of the EAC. The findings suggest that greater economic and financial integration within the EAC, as well as signing trade policy agreements, can help to reduce high transaction costs in the region and motivate both domestic and foreign investors to invest more in the EAC, which can lead to long-term economic expansion and growth for member countries.

Overall, the study highlights the importance of encouraging private investment in the EAC to achieve long-term economic expansion and growth. The findings suggest that economic integration within the EAC can help to encourage private sector support and growth and reduce high transaction costs in the region, which can lead to increased private investment in the EAC.

Jambo & Sundjo (2021) investigated the benefits of economic integration from COMESA for Zambia using data for the time period 1975-2017. Using OLS technique and time series data, the study findings indicated that COMESA policies being implemented in Zambia have a significant positive impact on Zambia's private investment. The study recommends that Zambia and all other Union members to stop using non-Tariff restrictions.

After conducting an extensive review of the relevant literature, it becomes apparent that significant research gaps persist in the examination of the influence of East African economic integration on private investment in EAC member states. The limited number of studies, such as the one conducted by Mose and Keino (2021) which investigates the impact of East African economic integration on private investment in EAC member states, trade openness was used as a proxy. Jambo and Sundjo (2021) looked at one Country which is Zambia. In contrast, this study opts to employ a dummy variable as a representation of Economic integration in five East African Countries. The utilization of dummy variables offers distinct advantages by accounting for time-invariant factors that may affect the outcome variable (Wooldridge, 2010). Furthermore, incorporating dummy variables allows for the exploration of varied effects across different countries (Baltagi et al., 2008).

The Effect of Some Selected Macro-Economic factors on Private Investment

Elizalde Guzmán et al. (2022) used VAR models to analyze the effect of inflation, credit given to private investors, and interest rate among other macroeconomic variables on private investment in Mexico. Utilizing time series data for the period 1995-2021. The study findings revealed a significant effect of inflation and interest rate as some of the key factors influencing private investment in Mexico. The study recommended improvement in availing domestic credit to private investors.

A research study done by Bernoth and Colavecchio (2014) looked at the macroeconomic determinants of private equity investment in Europe, concentrating on the comparison between central and Eastern European and Western Europe. The analysis focused on data from 2001-2011 for 16 nations. Using robust methods, the study found that inflation is one of the key determinants of private equity investment in Europe. This is in line with the findings of Mendoza and Collantes (2018) who Investigated the determinants of private investment in Peru utilizing data from 1997-2017. The study reveals that inflation was the main factor influencing the levels of private investment in Peru.

A study conducted by Breinlich et al. (2016) examined the impact of tariff reductions on trade and productivity in Canada using heterogeneous firm models. The findings of their research revealed significant growth in Canadian trade flows (comprising imports and exports to/from the US) and measured investment flows following the reduction of tariffs. During the period of 1988-1996, the average increase in Canadian trade flows was 118%, while investment productivity experienced a growth of 30%. In comparison, the pre-liberalization period from 1980 witnessed lower growth rates of only 44% (trade) and 17% (investment productivity).

In their study, Pajooyan and Khosravi (2021) examined how inflation impacts private investment in Iran. The results suggest that inflation, taxes, and high interest rate represent a fundamental challenge throughout a country's economic journey. Inflation refers to the persistent rise in overall price levels or the ongoing decline in the purchasing power of money, resulting in significant costs for society. It creates uncertainty, leading to reduced motivation and delayed investment decisions, complicating resource allocation and exerting a detrimental influence on investment returns. However, this disagrees with the findings of Masoudi (2016) who carried out a study on the key macro-economic variables that affect private investment in Iran using time series data (1972-2012)

and ARDL model. His results indicated a positive relationship between inflation and private investment inflows in Iran.

Ghura and Goodwin (2020) carried out a study on the determinants of private sector investment in Asia, Sub-Saharan Africa, and Latin America using panel data (1975-1992) and the Random effects model with 31 Countries. The study results revealed Real interest rates and inflation are one of the determinants of private investment in developing nations. The results on inflation align with the findings of Kingori (2015) who looked at the determinants of private investment in Kenya using the ARDL model. According to the study findings, inflation was very key in influencing private investment in Kenya.

Ayeni (2020) did a study on the determinants of private sector investment in Gambia employing the ARDL model and using time series data. According to the study's findings, inflation, Real interest rate among others was found to be significant. The study recommended that Gambia needs to consider the utilization of available local raw materials to increase private investment in the areas where the appropriate raw materials are available guided by the principle of comparative advantage. The results on interest rate are in line with the findings of Mekonnen and Mogess (2021) who carried out a study on the macroeconomic, political, and institutional determinants of private investment in Ethiopia from 1985 to 2018. Using the ARDL model, the results indicated that real interest rate has got a significant negative effect on private investment in long run. The study recommended enough effort to be put in to expand the household income in order to improve private investment.

A study conducted by Nibret (2018) looked at the factors affecting private investment in Ethiopia from 1992 to 2016. The study employed the ARDL model to analyze the long-term short-term relationships and short-term dynamics of private investment in Ethiopia. The findings of the study revealed interest rate and inflation rate were some of the key significant factors affecting private investment in Ethiopia. This aligns with the results of the study conducted by Gebremariam (2019) who Studied the determinants of private investment in manufacturing sector in Ethiopia. Time series data from 1991-2018 was used with OLS model. The study findings revealed that inflation rate and interest rate were some of the significant factors negatively affecting private investment in the manufacturing sector in Ethiopia. The study recommended that for Ethiopia to improve

private investment, it is very important to look at how household income can be increased to realize more private investment in manufacturing sector.

Using time series data for the period of 2003-2010, Sinor (2015) studied the determinants of domestic private investment in Amhara National regional state. The study findings showed that bank credit given to private investors and the real interest rates influence private investment levels in the short run. The results on bank credit align with the findings of Teklay (2017) carried out a study on factors affecting private investment financially in Ethiopia. Bank credit given to private investors had positive effect on private investment. The study recommended that policymakers should be aware of the needs of private sector investors and take steps to increase credit.

Sharma and Vidisha (2018) did a study on the factors affecting private investment in Mauritius for the period 1982-2014. They used the ARDL approach for analysis. The study results showed that inflation, interest rate, and credit given to private investors among others have got a significant long-term effect on private investment. However, Mauritius has consistently faced financial constraints due to the presence of high interest rates. Consequently, this situation has resulted in the postponement or abandonment of major private sector projects, as well as a decline in the growth of small and medium-sized businesses (SMEs). To promote private sector investment and foster economic growth in the short term, it is crucial to address the issue of high interest rates.

Hye and Lau (2018) suggest that credit constraints may be present in developing countries, which can limit firms' access to financing and impact investment decisions. The neoclassical model assumes a perfect competitive market, which implies that firms have access to an infinite supply of credit at the market interest rate. However, in reality, credit markets may be imperfect, and firms may face credit constraints due to factors such as lack of collateral, information asymmetries, or limited access to formal financial institutions.

Babu et al. (2020) investigated how taxation and macroeconomic variables influence private investment in sub-Saharan Africa, specifically focusing on the East African Community (EAC) and Southern African Development Community (SADC) nations. Employing One-Step Difference GMM to estimate a dynamic neo-classical investment model tailored for developing countries, the empirical findings reveal a noteworthy adverse impact of taxes on international trade and Value Added Tax (VAT) on private investment.

Demirhan and Masca (2016) investigated the factors that influence private investment inflows in developing countries between 2000 and 2004 using the estimation of a cross-sectional econometric model. The study utilizes data from a sample of 38 developing countries and focuses on the average values for the 2000-2004 period. The dependent variable in the model is private investment. The findings from the econometric analysis reveal that the inflation rate and taxes on international trade exhibit a statistically significant negative association in the primary model.

Benguria et al. (2022) looked at Anxiety or pain? The impact of tariffs and uncertainty on Chinese firms in the trade war between China and USA. The war between the two super powers brought in the season of trade policy uncertainty (TPU). In examining the impact of this crisis on the business environment of Chinese firms, the study revealed that trade policy uncertainty (TPU) haunted the operations of many private firms in China and USA. Giammetti (2020) studied the "Tariffs, domestic import substitution and trade diversion in input-output production networks: an exercise on Brexit" and found that imposition of tariffs creates lower losses and favors private investors.

Alves (2019) examined whether the taxation structure has the potential to impact private investment dynamics? His research delves into the connection between taxes imposed on foreign trade and private investment. Through an empirical analysis spanning the period of 1980 to 2015 and encompassing all OECD (Organization for Economic Co-operation and Development) countries. Employing panel data econometric techniques, his study sheds light on the detrimental effect of foreign trade taxes on investment growth.

After reviewing the relevant literature, several gaps have been identified as follows: Firstly, previous studies have predominantly focused on analyzing the impact of macroeconomic variables on private investment using a single country as a basis (Sharma and Vidisha., 2018 ; Ayeni., 2020); 2021; Breinlich et al., 2016). In contrast, this study concentrates on five East African countries, which enables the exploration of variations among individual countries (Hsiao, 2022).

Secondly, most studies have utilized time series data to examine the relationships (Sharma and Vidisha, 2018; Agu, 2015; Nibret, 2018). However, this study employs panel data analysis to account for individual-specific heterogeneity and investigate changes within individual units over time, thereby providing a more comprehensive understanding of the variables' relationships (Hsiao, 2022.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

In this chapter, the methodology employed to examine the effects of economic integration on private investment, with a specific focus on the East African Community (EAC), is described as:

3.1 Model Specification

The econometric model takes the following form;

$$\boldsymbol{PI_{it} = \propto_{it} + \theta EI_{it} + X'_{it}\beta + U_{it}} \ldots\ldots\ldots\ldots \textbf{(i)}$$

I=1,2,3, …,7, $t = 1,2,3, \ldots, T, U_{it} \sim iid(0, \delta^2)$

Where:PI_{it} =Private investment/Dependent variable

$EI_{it} = EAC\ economic\ integration$

$X'_{it} = Represents\ all\ estimators\ besides\ EAC$

θ =Is a dummy for economic integration

β =Respresents a set of control estimators X'_{it}likely to affect private investment besides the EAC economic integration.

$U_{it=}$The error term.

The econometric specification of Equation (1) takes the form.

$$\boldsymbol{InPI_{it}=\alpha+\theta_{1t}\, EI_{it}+\beta_1 InRINT_{it} + \beta_2\, InINFL_{it} + \beta_5 + \beta_6 In\ CREDIT_{it} + \beta_7 In\ TAX_{it} + U_{it}} \ldots\ldots\ldots\ldots\ldots\ldots \textbf{(ii)}$$

In INFL is the natural log of the annual inflation rate; In CREDIT is the natural log of domestic credit, and In TAX is the natural log of taxes on international trade, and In RINT is the natural log of real interest rate for all the five EAC member nations, namely Kenya, Tanzania, Burundi, Rwanda, and Uganda.

Because I wanted to log a model with negative values, the following procedure was followed:

y = log (percentage/100 + C)

where:

- y is the transformed value after applying the logarithm
- percentage is the original percentage value
- C is a constant added to the scaled percentage value to ensure all values are positive before taking the logarithm **(C = |min(data)| + 1)**

3.1.2 Definition and Measurement of variables

Following the approaches by Ahmad et al. (2019), private investment inflows (% of GDP) is taken as the dependent variable which is measured as the amount of private investment inflows. This indicates net inflows as a portion of GDP from private investment for all member countries; Kenya, Burundi, Rwanda, Tanzania, and Uganda from 1990 to 2021, with a total of 31 observations for each.

The study uses a dummy variable to measure EAC economic integration, with a value of 1 for the years 2000 to 2021, 2007 to 2021 and 0 for earlier years. The literature suggests that regional integration can boost private investment by promoting industrial growth, increasing production, exports, and job creation(Hye and Lau, 2018; Campos et al., 2019; Saputra and Fauzi, 2022; Mose et al., 2021; Mose and Keino, 2017). Therefore, the study expects a positive impact of EAC regional integration on private investment in the member nations.

In addition to the main explanatory variable, EAC economic integration, the study also discusses other variables. Without more information on these variables, it is difficult to provide further insight into the study's methodology and findings. However, some possible variables that the study may consider are:

Inflation (annual %) is the yearly growth rate of the GDP implicit deflator. According to Kilindo (2017), high inflation can lead to a drop in private investment inflows, which suggests a negative relationship.

The real interest rate, which is the lending rate of interest adjusted for inflation using the GDP deflator, is another variable included in the analysis. According to Nainggolan and Daulay (2015), high interest rates discourage private investors and lead to lower private investment. This is because high-interest rates make borrowing more expensive. A negative effect is therefore expected.

Domestic Credit given to the private sector (as a percentage of GDP) is a common indicator of economic development in empirical studies (Bonga and Nyoni 2017). Because the private sector funds its investments primarily through investment loans. This study anticipates a positive effect.

The measurement of taxes on international trade is expressed as a percentage of GDP. The imposition of such taxes by countries effectively raises the expenses associated with importing goods and reduces the profitability of exporting goods. As a consequence, this can result in a decrease in trade volume, thereby negatively impacting investment and economic growth.

Table 2: Summary of Definition and Measurement of Variables

Variables	**Definition**	**Expected sign**
Pi	Private Investment (% of GDP)	+
Tax	Taxes on International Trade expressed as a Percentage of GDP	_
Rint	Real Interest Rate (%)	-
Infl	Inflation, GDP deflator (annual %)	-
Domestic Credit	Credit given to the Private Sector for Investment (as a percentage of GDP)	+
EAC Economic Integration	The study uses a dummy variable to measure EAC economic integration, with a value of 1 for the years 2000 to 2021, 2007 to 2021 and 0 for earlier years before integration.	+

Source: Author's

3.1.3 Description of Panel Estimation Procedure

The study uses Stata software package to do panel data analysis to examine the impact of EAC economic integration on private investment in Kenya, Tanzania, Rwanda, Burundi, and Uganda. The use of panel data can be advantageous because it allows for the exploration of both within and between effects, which can provide more robust estimates and better control for unobserved heterogeneity and omitted variables. The research employs the Stata software package to conduct panel data analysis in order to investigate the influence of EAC economic integration on private investment in Kenya, Tanzania, Rwanda, Burundi, and Uganda. The utilization of panel data offers several advantages as it allows for examining both within-country and between-country effects, resulting in more reliable estimates and better control over unobservable differences and variables that are not observed (Cortes, 2016). The anticipated estimation procedure involves examining serial correlation through pairwise correlation test and stationarity through a panel unit root test. Additionally, a Hausman test is performed to choose between the Random effects model and the Fixed effects model. The EAC economic integration dummy variable is considered as a constant variable and is included in the model as an independent variable.

Fixed effects estimation involves including individual-specific intercepts for each country in the analysis. By doing so, it controls for time-invariant country-specific characteristics that could affect private investment, such as historical, cultural, or institutional factors unique to each country. This method is particularly useful when there are unobserved heterogeneities across countries that could bias the results (Wooldridge, 2010).

Random effects estimation accounts for both time-invariant country-specific characteristics and unobserved heterogeneities, but it treats these country-specific effects as random variables, assuming they are uncorrelated with the explanatory variables (EAC economic integration in this case). Random effects can be more efficient when there is substantial variation across countries and limited within-country variation over time. This approach provides a broader perspective on the average impact of EAC integration on private investment across the five countries (Wooldridge, 2010).

3.1.4 Diagnostic tests

The study investigates multicollinearity, which pertains to the correlation among explanatory variables within a regression model. To evaluate multicollinearity, a simple pairwise correlation test is conducted on the explanatory variables. The resulting correlation coefficients between the variables are observed to be below 0.80. This threshold indicates that the model does not encounter a significant issue of multicollinearity. The fact that the correlation coefficients remain below 0.80 suggests that the explanatory variables are not strongly correlated with each other, which is advantageous for the analysis.

Stationarity: The study conducts unit root tests on the panel data to ascertain the stationarity of the study variables. Stationarity refers to a characteristic of a time series wherein its statistical properties, such as mean and variance, remain constant over time. If the variables exhibit stationarity, conventional estimation methods can be employed to determine their relationships. However, if the variables are non-stationary, a co-integration test becomes necessary.

The test will employ Im-Pesaran and Shin (IPS) Test: This panel unit root test assumes heterogeneous coefficients of the study variables, allowing for variation across countries. It also examines panel data stationarity by testing for the presence of unit roots. By conducting these unit root tests, the study aims to identify whether the variables exhibit stationarity or non-stationarity, which helps in selecting the appropriate estimation methods for analyzing the relationships between the variables (Negi and Wooldridge, 2021).

The study applies logarithmic transformation because it is a good approach to handle situations where the independent and dependent variables have a non-linear relationship. By taking the logarithm of the variables, it may be easier to model the relationship as a linear function (Gujarati, 2020).

3.1.5 Data sources

The study extensively depends on secondary data, primarily World Bank (2022) Development indicators for the five EAC member countries covering the period 1990-2021. The EAC economic integration is a dummy variable that returns 1 if the country joined the EAC economic integration that year and 0 if it did not. The data are annual, and the sample period includes the five EAC member countries of Burundi, Kenya, Rwanda, Uganda, and Tanzania from 1990 to 2021.

CHAPTER FOUR

EMPIRICAL FINDINGS

4.0 Introduction

This chapter presents empirical findings composed of descriptive statistics panel unit tests, regression results and diagnostic tests. Diagnostic tests help to assess the validity and robustness of the data. Regression models were employed to investigate the influence of the East African Community (EAC) economic integration on private investment in the EAC partner states. Additionally, the study aims to identify other factors that determine private investment in these partner states.

4.1 Data description

Table 3 displays the summary statistics for the study variables, including the EAC dummy variable. These statistics offer a comprehensive overview of the essential characteristics of the variables under examination. The table generally encompasses measures such as mean, standard deviation, minimum, and maximum values.

Table 4 showcases the pairwise correlation matrix for the study variables, including the EAC dummy variable. This matrix visually presents the connections between various pairs of variables by computing their correlation coefficients. These coefficients indicate the magnitude and direction of the linear relationship between two variables.

Table 3: Descriptive Statistics

Variable		Mean	St. Dev.	Min	Max	Observations
EI		0.6	0.4914361	0	1	N=160
			0.1198143	0.46875	0.6875	n=5
			0.479534	-0.0875	1.13125	T=32
InPI	Overall	2.888649	0.4387788	1.02286	3.76625	N=160
	Between		0.3629255	2.322725	3.320698	n=5
	Within		0.2940955	1.588784	3.476908	T=32
lnCredit	Overall	2.540147	0.5807507	1.078743	3.601352	N=160
	Between		0.4806698	2.075289	3.249789	n=5
	Within		0.3889397	1.457703	3.313904	T=32
lnRint	Overall	3.740179	0.3630123	-0.0000296	4.068302	N=160
	Between		0.0424406	3.683981	3.791069	n=5
	Within		0.3610096	-0.01958	4.048751	T=32
lnInfl	Overall	4.12528	0.2122419	3.071023	4.550214	N=160
	Between		0.1217825	3.927608	4.24434	n=5
	Within		0.1819539	3.142316	4.431154	T=32
lnTax	Overall	0.5682095	0.4716684	-0.356675	2.057962	N=160
	Between		0.2933273	0.2056041	0.860701	n=5
	Within		0.3914147	-0.0889145	2.420568	T=32

Source: Author's Computations

The values of descriptive statistics are in logarithmic form. The statistical summary presented above indicates that data was collected from five EAC partner states spanning a period of 32 years (1990-2021), resulting into 160 observations. The panel data is observed to be well-balanced, meaning that there is a relatively equal number of observations for each entity. The summary statistics offer an analysis of the variables in terms of their overall, between, and within descriptions. The standard deviations suggest that the variables possess sufficient variability and are suitable for inclusion in the regression analysis. The mean values are greater than the standard deviation values for all variables. This depicts absence of outliers and hence there was no need to

use dfbeta to take care of outliers. These statistics shed light on various aspects of the collected data, such as its time span, number of observations, balance, and the suitability of the variables for regression analysis.

Table 4: Pair Wise Correlation Matrix

Variable	lnpi	Ei	Lnrint	lninfl	lntax	lncredit
lnpi	1.0000					
Ei	0.5180	1.0000				
Lnrint	0.1861	0.0609	1.0000			
Lninfl	0.6996	0.3932	0.6973	1.0000		
Lntax	-0.3357	-0.2702	0.0499	-0.1056	1.0000	
Lncredit	-0.0020	0.3741	0.0974	0.0650	-0.0856	1.0000

Source: Author's Computations

Drawing from the correlation matrix displayed in Table 4, various associations with private investment can be observed. Notably, positive correlations are evident between private investment and variables including inflation, domestic credit, real interest rate, and East African community economic integration. Conversely, negative correlations are observed between private investment and taxes on international trade. It is worth highlighting that none of the correlation coefficients exceed 0.8, indicating the absence of multicollinearity concerns among the independent variables. Consequently, it can be inferred that the relationships among these variables are not excessively strong, signifying the absence of a significant collinearity issue.

4.3 Panel Unit Root Test

The analysis incorporates a panel unit root test utilizing the Im-Pesaran and Shin (IPS) test, assuming heterogeneous coefficients of the study variables. The null hypothesis posits that all panels encompass unit roots, indicating non-stationarity (Baltagi et al., 2008). The outcomes of this test are presented in Table 5.

The study employs IPS test because it detects Cross-Sectional Dependence: The IPS test helps researchers identify whether cross-sectional dependence is present in the data. In many panel datasets, observations for different units may exhibit correlation due to common unobserved factors, spillover effects, or interdependence among the entities being studied. Ignoring cross-

sectional dependence can lead to inefficient and biased estimates, which can impact the validity of the conclusions drawn from the analysis (Pesaran et al., 2001).

Robustness: By testing for cross-sectional dependence, researchers can ensure the robustness of their results. The presence of cross-sectional dependence may affect the efficiency of standard panel data estimators, such as the fixed effects or random effects models. The IPS test allows researchers to evaluate whether the model assumptions hold and make necessary adjustments if needed (Pesaran et al., 2001).

Table 5: Panel Unit Root Test

Variable	**IPS**	
	Coefficient	**Conclusion**
Private Investment	20.7163**	*1(0)*
Rint	-6.3399**	*1(0)*
Credit	-0.1007***	*1(0)*
Inflation	27.1403***	*1(0)*
Tax	16.6534***	*1(0)*

Source: Author's Computations

The results of the panel unit root tests above indicate that all variables (Credit, Inflation, Tax, and Private investment) are stationary at levels using IPS test.

4.4 Regression Results.

The regression analysis centers on examining the connection between the dependent variable, which represents the percentage of private investment as a proportion of GDP in all five EAC countries, and the explanatory variables, specifically EAC economic integration, along with several control variables incorporated in the model. The control variables encompass Taxes on international trade, inflation, credit given, and real interest rate. All these variables are expressed in their natural logarithmic form. Before log transformation, values were transformed in order to remove negative values (Transformed value = original value+ constant value).

Fixed effects model results were consistent according to the Hausman Test results. It also controls for unobserved individual-specific characteristics. This helps to eliminate the bias that could arise from unobserved factors affecting both the dependent variable and the independent variables (Wooldridge, 2010).

Table 6: Estimated Results

The regression model incorporates the dependent variable as the proportion of private investment in relation to GDP.

Variable	**Coefficient (FE)**	**Coefficient (RE)**
EI	0.1270922*** (0.0376556)	0.0802058** (0.0375509)
In _rint	-0.6538332*** (0.0674238)	-0.8465345*** (0.0597124)
In_infl	1.802179*** (0.1528785)	2.3553*** (0.110772)
In_credit	0.0194311 (0.0466162)	-0.041727 (0.0272872)
In_tax	-0.0471917 (0.0356338)	-0.1495789*** (0.0315582)
Constant	-2.199192*** (0.3957859)	-3.518574*** (0.3342089)
	F (5,150) = 71.06 (Prob > F = 0.0000) R-sq: within = 0.7032 between = 0.9891 overall = 0.8136	Wald chi2(5) = 793.06 Prob > chi2 =0.0000 R-sq: within = 0.6843 between = 0.9911 overall = 0.8374
***** p<.01, ** p<.05, * p<.1 N=160**		
Hausman Specification Test= 38.37* Prob > chi2 =0.0000** ****P<0.05 ***P<0.01. rho=0.42574293 (fraction of variance due to u_i)**		

Source: Author's Computations

4.5 Discussion of Results

The presence of asterisks (***), as well as double asterisks (**) denotes statistical significance at 1% and 5% levels, respectively. The Hausman specification test was conducted to determine the preferred model between random effects (RE) and fixed effects (FE). The null hypothesis assumes that the RE model is consistent, while the alternative hypothesis suggests that the FE model is consistent. However, the results indicate that the null hypothesis can be rejected, leading to the conclusion that the FE model is the preferred choice and hence the interpreted results are based on the Fixed Effects model.

The probability of chi2 (= 0.0000) indicates that all predictors jointly have got a significant effect on the outcome variable at 5% level of significance and hence the model is good.

Economic integration was found to have a positive (0.1270922) and significant effect on private investment at 1 (one) percent level of significance in EAC region. The coefficient of regional integration means when Countries join EAC, they are predicted to register higher private investments of about 13 percent more than before joining keeping other factors constant. Hence economic integration boosts private investment.

The finding that EAC economic integration has a positive impact on private investment aligns with previous research and theory on the subject. If countries are integrated, they pool resources and provide a conducive environment that boost private environment, such as better infrastructure, expanded market, free movement of goods across boarders among others. Some of the studies support this finding such as Viner (2014), Ogola et al. (2015), Mose et al. (2021), Jambo and Sundjo (2021), Bozkurt and Karaköy (2022), and among others. These studies strengthen the evidence and supports the notion that integration positively influences private investment in the region. The formation of the customs union in 2005, which encompassed the elimination of tariffs on goods among member nations and the imposition of a unified external tariff on commodities from non-member countries, potentially could be the reason behind this positive relationship among the participating nations (Umulisa, 2020).

The variable inflation is statistically significant (1.802179) at a 1% level of significance. Implying that a 1% increase in inflation between member countries increases private investment by 1.802179 % holding other factors constant. This is because of Long-Term Investment Confidence effect among other reasons: When inflation is moderate and stable, businesses in East Africa can

have greater confidence in their long-term planning and investment decisions. Predictable inflation allows for better forecasting and risk assessment, making businesses more willing to commit to long-term projects (Brunner et al., 1973). These findings agree with the findings of Masoudi (2016) among others who established a positive relationship between inflation and private investment. He reports that during periods of moderate inflation, investment in the agricultural sector tends to increase as higher profits can be attained. Therefore, the rise in wholesale prices of agricultural products, compared to the wholesale price of all goods, serves as an incentive for agricultural investment rather than a constraint. However, This disagrees with the findings of Pajooyan and Khosravi (2012) who examined how inflation impacts private investment. Their results suggest that inflation represents a fundamental challenge throughout a country's economic journey.

The coefficient of real interest rate (-0.6538332) is statistically significant at 1% level of significance. Implying that a 1% increase in real interest rate reduces private investment by approximately 0.6538332 % assuming all other factors remain constant as expected in the theory and other findings by scholars such as Mekonnen & Mogess (2021) and Nibret (2018) who found out interest rate has negative effect on private investment. According to Nainggolan and Daulay (2015), high interest rates discourage private investors and lead to lower private investment inflows. This is because high interest rates make borrowing more expensive.

The rho value of =0.42574293 indicates that approximately 43% of the variations are due to heterogeneity and the rest are due to goodness of fit. The R-squared for between of 0.9891 is higher than for within 0.7032 indicating that the time effect is more important than the individual effect.

CHAPTER FIVE

SUMMARY AND POLICY RECOMMENDATIONS

5.0 Introduction

In this chapter, the major conclusions drawn from the study are presented, providing a summary of the key findings and insights obtained from the analysis conducted in the previous chapters. These conclusions serve as a culmination of the research and provide answers to the research hypotheses posed at the beginning of the study.

5.1 Summary

This study aimed to evaluate the influence of East African economic integration on private investment in the member states of the East African Community (EAC). Additionally, the study sought to identify effect of other macroeconomic factors such (taxes, inflation, domestic credit given, and real interest rate on private investment in the EAC. To assess these objectives, the study employed fixed effect and random effect models and Hausman test. Basing on Hausman Test, the Fixed effects model was consistent.

Regional integration was found to have a positive and significant effect on private investment at one percent level of significance in EAC region. The coefficient of economic integration means that countries that join EAC are predicted to register higher private investments of about 13 percent more than non EAC member states, keeping other factors constant. The study's findings indicate that EAC economic integration affects private investment in the EAC partner states while inflation had a positive significant effect on private investment. Furthermore, the study identified Real interest rate as other significant determinant of private investment in the EAC region. However, according to the findings of the study, Domestic Credit given to private investors was observed to positively influence private investment, although it was not statistically significant at 5% level of significance. Similarly, taxes were found to have a negative impact on private investment, but again, this effect was not statistically significant at 5% level using the fixed effects model.

5.2 Policy recommendations

Given the positive relationship between regional integration and private investment, EAC members should continue its policy of encouraging more countries to join the EAC block as it has done, recently with South Sudan and the Democratic Republic of Congo (De Melo & Tsikata, 2015).

EAC Members should establish a united East African Development Bank that can provide credit to private investors at a very low interest rate as is the case with developed Countries.

Adopting appropriate monetary policies Centra Banks to keep inflation at moderate levels is crucial for the economic stability and sustainable private investment growth of the East African Community (EAC) member states.

5.3 Areas for further research

The areas identified for further study in the East African Community (EAC) have significant relevance to the region's economic development. Exploring these areas can provide valuable insights into the potential impact of various factors on private investment, economic growth and welfare.

The relationship between infrastructure development in the EAC and its impact on intra-regional trade. A well-developed and efficient infrastructure network can stimulate economic growth within the EAC member states. As trade flows increase due to better connectivity, it can create more opportunities for businesses, generate employment, and attract foreign investment.

The effect of one currency across member states on private investment. When countries in a region adopt a common currency, they create a monetary union, which can lead to increased economic integration and cooperation among member states. The most notable example of such a union is the Eurozone, where countries share the euro as their common currency.

By addressing these research areas, policy makers, researchers, and stakeholders can gain a deeper understanding of the potential strategies and interventions that can drive economic growth, promote regional integration, and improve the overall wellbeing of the EAC partner states.

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