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ENDOGENOUS GROWTH MODELLING OF FOREIGN DIRECT INVESTMENT IN COMESA COUNTRIES

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ABSTRACT
To overcome the high poverty levels and improve the standard of living in developing countries there is need for a substantial inflow of external resources in order to fill the savings and foreign exchange gaps. More importantly, several studies have examined relationship between foreign direct investment and economic growth. However, the studies indicate divergent views with a mixture of positive and negative findings and fell short of considering foreign direct investment from other forms of investment. This makes the relationship between FDI and economic growth in COMESA countries to remain unknown. The main objective of the study was to examine the effect of foreign direct investment on economic growth in COMESA countries. The study used World Bank data for a panel of 7 countries for the period from 2005 to 2023. The study was anchored on the endogenous growth model and correlational research design was employed. Hausman specification test was employed so as to ascertain whether to use fixed or the random effect model in the estimation. Results of random effect regression model indicated that natural log of foreign direct investment has positive and significant effect on natural log of economic growth which was statistically significant at one percent level of significance. The study concluded that FDI in COMESA region plays a significant role in accelerating growth though faced by several limitations hindering its stimulation and expansion. The study recommends that COMESA countries should accelerate economic growth through enhanced regional integration in order to attract the market –seeking FDI.
KEYWORDS: *Economic Growth, Foreign Direct Investment, COMESA Countries*

1.0 INTRODUCTION

1.1 Background of the study

It is widely recognized that foreign direct investment(FDI) produces economic benefits to the recipient countries by providing capital, foreign exchange,technology,competition and by enhancing access to foreign markets(UNCTAD,1991;Romer,1993;Caves,1996;Worldbank,1999;Crespo and Fontura,2007).It is argued that FDI can also enhance domestic investment and innovation. Thus developing countries that operate at low savings and investment rate, and therefore, low per capita income growth rate, may escape from the trap by importing capital from abroad in the form of foreign direct investment, (Hayami, 2001).Most developing countries are competing with each other to attract handsome amount of FDI by adopting different promotional policies, such as by liberalizing trade regimes, establishing special economic zones, and by offering incentives to the foreign investors. In 1991, for example, a total of 35 countries made almost 82 changes in their FDI policies to attract FDI(Riffin,1993).However, the general trend of FDI inflow to the developing countries is not very encouraging.First, developing countries are dominated by the developed countries in attracting FDI.According to UNCTAD(2007),total FDI inflow in the world was USD 945.8 billion in 2005,of which developed countries received USD 590.3 billion, which was 62.4% of the total FDI inflow in the world, whereas developing countries received only USD 345.5 billion (37.6%).Second, among the developing countries, only a few countries such as China,Indonesia,Egypt and Columbia were successful in attracting FDI,whereas majority of the developing countries apparently failed to attract FDI.According to UNCTAD(2007),Indonesia, Egypt and Columbia received a total of 96.4 billion in 2007,whereas China received nearly 31% of total FDI that flowed to developing countries. Questions arise as to why FDI inflow was low in some countries and biased towards only a few countries.

To overcome the high poverty levels and improve the standard of living in developing countries there is need for a substantial inflow of external resources in order to fill the savings and foreign exchange gaps, Ocharo (2014).This will

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increase the rate of capital accumulation and growth, one of these external is the foreign direct investment. It is for this reason that effect of foreign direct investment on economic growth has received a lot of attention especially in the recent past following the global financial crisis of 2008 (Macias & Massa, 2009).There are at least four different motives for the countries to invest across their national borders. First is market seeking investment, which aims to access new markets that are attractive in size, growth or both. Second is efficiency seeking investment, which aims at production that is cost effective. Some of the factors these investment looks at is the cost of labour, the skills of workforce, the cost and quality of infrastructure as well as the administrative costs, (Manyanza, 2012).Third is strategic asset seeking investment, geared towards man-made assets which take the form of mergers and acquisitions where a foreign firm takes over a domestic company that possesses that assets. Finally, is natural seeking investments, which seek to exploit the natural resource endowment of countries, such as the countries endowed with minerals (UNCTAD,1998 & Manyanza,2012).

2.0 LITERATURE REVIEW

2.1 Introduction

In this section, both theoretical and empirical literature on foreign direct investment and economic growth is reviewed. The first section reviews the theory and exposes the theoretical foundations that underlie the effects of FDI on economic growth. The theoretical representations of the models are described. The second section reviews studies carried out on the subject, and the final section deals with the critic of the literature.

2.2 Theoretical Framework

The study focused on endogenous growth model borrowed from Barro *et al* (1995) and Ngugi(2013) because it has advantage over neoclassical growth model in that it considers both short run and long run effects of FDI volatility on economic growth.

2.2.1 Endogenous growth model

The study presents a simple endogenous growth model in which FDI has appositive effect on growth, whereas the volatility in FDI flows has a negative effect on economic growth. In the model FDI,as well as the volatility in FDI,affects growth via the cost of innovation. The model assumes that technical progress is represented through the variety of capital goods available. There are three types of agents in the model: final goods producers who rent capital goods: innovators who produce capital goods and consumers.

Final goods producers are assumed to have a production function of the form:

$$Y_i = AL_i^{1-\alpha} \sum_{j=i}^{N} K_{ij}^{\alpha} \quad \ldots\ldots\ldots\

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Assume the producer has monopoly rights over the production and sale of the capital goods. Assume also that the production costs of K,after it has been invented, equal 1 in each period, and that the rate of return (r) is constant between times v and t.

The present value of the returns from inventing and producing in several periods,V(t),for the capital good j equals(where Kj is the total quantity produced at each date)

$$V(t)=\int_{t}^{\infty}\left(P_j-1\right)K_{je}^{-r(v-t)}dv \quad \text{.....(5)}$$

The innovators sets P_j by optimizing V(t).As Kj is independent of time, this comes down to optimizing $\left(P_j-1\right)k_j$,where k_j is the total quantity demanded by different producers $i(Kj=\sum iKij)$ .The solution of the optimization procedure can be shown to be Pj=P=1/α≥1 (where 1/α is the mark-up).Using this result ,the quantity demanded from each variety K can be written as:

$$K_i=K=LA^{1/(1-\alpha)}\alpha^{2/(1-\alpha)} \quad \text{.....(6)}$$

Using the value for Pj and (6),(5) can be rewritten as:

$$v(t)=LA^{(1/(1-\alpha)}\left(\frac{1-\alpha}{\alpha}\right)\alpha^{2/(1-\alpha)}\int_{t}^{\infty}\ell^{-r(v-t)}dv \quad \text{.....(7)}$$

At equilibrium with positive R and D (at cost η) and increasing N,then V(t)=η ,hence (7) can be solved to:

$$r=\left(\frac{1}{n}\right)LA^{1/(1-\alpha)}\left(\frac{1-\alpha}{\alpha}\right)\alpha^{2/(1-\alpha)} \quad \text{.....(8)}$$

The study now introduces FDI.The costs of production contain two parts. Each period there are fixed maintenance costs, assumed equal to 1.In addition there are fixed set up costs (R and D costs, η).The costs of discovering anew variety of a good(costs of innovation) are assumed to be the same for all goods.Moreover,assume that the costs of discovering new goods depend on the ratio of goods produced in other countries to those produced domestically. This ratio is a proxy for FDI.A higher ratio of goods produced in other countries, and so more FDI,would lead to a decline in the costs of innovation. This reflects the idea that it is cheaper to imitate than to innovate and that the possibility to imitate increases if more goods are produced in other countries(i.e when FDI is higher).The cost of discovering a new good can be modelled as(using FDI=F): $\eta=f(F)$ where $\partial n/\partial F\le 0$

To account for uncertainity with respect to F,the study assumes that F is stochastic,and modelled as

F=μ(F)+ε ,where μ(F) is the mean of FDI and ε is the error term with $\varepsilon\approx N(0,\varepsilon^2).$ The certainity equivalent of the expected value of FDI equals:

$$E(F)=\mu(F)-0.5B\delta^2(F)$$

Where B is the coefficient of absolute risk aversion(B is positive for risk averse innovators) and $\delta^2(F)$ **r**efers to the variance in FDI inflows. Taking into account the certainity equivalent value of FDI, and assuming that the rate of return on assets(r) is constant and there is free entry,(8) can be written as:

$$r=\left(\frac{L}{F\left[U(F)-0.5B\delta^2(F)\right]}\right)A^{1/(1-\alpha)}\left(\frac{1-\alpha}{\alpha}\right)\alpha^{2/(1-\alpha)} \quad \text{.....(9)}$$

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Equation (9) shows that an increase in FDI leads to an increase in r whereas an increase in the variance of FDI leads to a decrease in r. To introduce the link to economic growth the close the model by considering behavior of households. Households maximize a standard inter-temporal utility function:

$$U = \int_{t}^{\infty} \left(\frac{C^{1-\theta} - 1}{1-\theta} \right) \ell^{-pt} dt \qquad \text{.....(10)}$$

Where c denotes consumption and ρ is the discount rate. This optimization process, subject to the budget constraint for households, can be shown to give the well-known result of the growth rate of consumption, $gC = (1/\theta)(r - \rho)$,where θ is the elasticity of marginal utility. In the steady state the growth rate of consumption equals the growth rate of output,g.using the expression for r from (9), economic growth can be expressed as follows:

$$g = (1-\theta)(\left\{ \frac{L}{f\left[U(F) - 0.5B\delta^2(F)\right]} \right\} A^{1/1-\alpha} \left(\frac{1-\alpha}{\alpha} \right) \alpha^{2/(1-\alpha)} - p) \qquad \text{.....(11)}$$

Equation (11) evidently shows that an increase in FDI leads to an increase in the growth rate of output(g).An increase in FDI lowers set up costs(for technology adaptation) and raises the return on assets (r).This leads to an increase in saving and so a higher growth rate in consumption and output. However an increase in the volatility of FDI negatively affects growth as it decreases the certainity equivalent value of FDI and consequently increases set up costs and decreases the rate of return on invested foreign capital.

2.3 Empirical literature

2.3.1 Foreign direct investment and economic growth

Thi-Huyen *et al* (2019) examined foreign direct investment and economic growth in the short run and long run, evidence from developing countries. The study examined and provided additional and relevant quantitative evidence on the impact of foreign direct investment on economic growth, both in the short and long run-in developing countries of the lower middle-income group in 2000 to 2014. Various economic methodologies were employed such as the panel-based unit root test, Johanssen co integration test, vector error correction model (VECM), and fully modified OLS (FMOLS)to ensure the robustness of the findings results of the study showed that FDI helps stimulates economic growth in the long run, although it has a negative impact in the short run for the countries in this study. Other macroeconomics factors also played an important role in explaining economic growth in these countries, money supply has a positive effect on growth in the short run, while total credit for private sector has a negative effect, in addition, long-run economic growth is driven by money supply, human capital, total domestic investment, and domestic credit for the private sector.

Mugendi (2014) conducted a study on a foreign direct investment spillovers and productivity of domestic firms in Kenya. The study empirically examined if in Kenya, domestic firms have benefited from foreign firms using a panel data for the period of 2009 and 2011. The study looked at the transmission mechanism that is both horizontal and vertical linkages. To achieve study objectives primary data was collected from a sample of 204 firms from Nairobi, Nakuru, Mombasa and Kisumu cities. The data was captured using a structured questionnaire which was administered to various firms and analysis was done using feasible generalized least square method (FGLS). The study revealed that foreign firms influenced domestic firm's productivity through both vertical and horizontal spillovers. Foreign firms were found to channel horizontal spillovers through competition effects, demonstration effect and labour turn over effects. On vertical spillovers, small firms were found to benefit most from selling of goods and services to foreign firms. The variables included in the study were ethnicity, skills, gender, technological gap, size, research and development and sectorial dummy, skills, gender and size of firms were the variables that were found to have a major influence on firm's productivity in Kenya. Additionally, other variables like technological gap, research and development had an influence on firm's productivity. The study also found that firm's ownership characteristics were a major determinant of productivity whereby foreign firms were found to be more productive than domestic firms in the two sectors; manufacturing and agriculture but productivity in the service sector was the same. Finally, skills, technological gap, size, research and development were major factors that determined horizontal and vertical

spillovers from foreign to domestic firms, other factors like ethnicity and gender were insignificant. From the study it is evident that although the study employed panel data with robust methodologies there was an inconclusive debate on foreign direct investment spillover and the productivity of firms given the mixed results.

Rutto (2020) investigated the effect of foreign direct investment, human capital and infrastructure development on Kenya's manufacturing exports to COMESA region for the study period 2008 to 2016.The study employed the fixed effect model estimation and gravity model anchored on the theory of international trade was used and adopted. Unit root tests were estimated using IM Pesaran and shin and Levin- Lin -Chu tests. Variables under study comprised of Kenya's manufacturing exports, foreign direct investment, human capital development, infrastructure development and distance. Hausman test was used to choose between fixed and random effect models. Results of the fixed effect model indicated that FDI was positively significant determinant of Kenya's manufacturing exports. The regression results further documented that human capital development had positive and significant effect on Kenya's manufacturing exports and also proved that manufactured exports were positively determined significantly by infrastructure development. Major drawback of the study was that it concentrated much on the Kenya's manufactured exports to the COMESA region. Also, whereas the study used the gravity model in our study the endogenous growth model was adopted.

Andy *et al* (2020) employed relevant economic methodology on panel data environment to analysis the effect of foreign direct investment inflows on economic growth of 30 leading global economies during the period between 1998 and 2017. Other variables considered in the analysis were domestic credit to private sectors, gross fixed capital formation, inflation, trade openness and youth unemployment, results show mixed growth effect of the variables in general specifically FDI exerted positive and significant effect on economic growth of the countries during the period. The study concluded that FDI inflow enhance economic growth and emphasized the need to foster more FDI-attracting policies as well as adequate GFCF to complement FDI's for sustainable economic potentials.

Glauco (2006) investigated the growth effect of FDI and portfolio investment flows to developing countries. A disaggregated analysis by income level. The study was conducted on the impact of foreign direct investment and portfolio investment flows on the economic growth of low-, lower middle and upper middle-income countries. The study addressed research hypothesis using a dynamic panel model and large data set 126 developing countries for the period 1985 to 2002. Employing the system generalized methods of moments (GMM) estimation approach. The findings suggested that only developing countries that have reached a minimum level of economic development and absorptive capacity are capturing the growth enhancing effects of both forms of investment flows.

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The section presents the model specified for the study. The variables used in the study are defined. The data sources and the methods used in data analysis are explained.

3.2 Research Design

According to Oso and Onen (2011) research design describes the pattern that the research intends to follow, the plan or the strategy for conducting the research. The study will be conducted using correlational research design based on the panel data. Correlational research is basically concerned with assessing relationships among variables. It is based on the premise that if a statistically significant relationship exists between two variables, then it is possible to predict one variable using the information available on another variable (Mugenda, 2008). Correlational research design provides rigorous and replicable procedure for understanding relationships and determines whether, and to what degree, a relationship exists between quantifiable variables, (Oso & Onen, 2011).

3.3 Model Specification

The model is specified to investigate the effect of foreign direct investment on economic growth in COMESA countries. It is a multiple regression model whereby foreign direct investment, gross capital formation and infrastructure development are the independent variables and dependent variable is the economic growth proxied by the gross domestic product per capita. The control variables comprise of inflation rate, population growth and public expenditure. Thus we have the multiple regression model of the form derived and estimated as follows

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$$LNGDP_{it} = \beta_o + \beta_1 FDI_{it} + \beta_2 GCF_{it} + \beta_3 FTS_{it} + \beta_4 INFL_{it} + \beta_5 POPLN_{it} + \beta_6 PE_{it} + \varepsilon_{it}$$

……..(3.1)

Where:

$LNGDP_{it}$ is the natural log of gross domestic product

$LNFDI_{it}$ is the natural log of foreign direct investment

$LNGCF$ is the natural log of gross capital formation

$LNFTS_{it}$ is the natural log of infrastructure development

$LNINFL_{it}$ is the natural log of inflation rate

$LNPOPLN_{it}$ is the natural log of population growth rate

$LNPE_{it}$ is the natural log of public expenditure

ε_i = the error term

i=…n, where n is the number of firms. β_0 =constant/the intercept point of the regression line and the Y-axis. β =is the slope /gradient of the regression line. ε =is the error term.

The expected signs $\beta_1 \geq 0, \beta_2 \geq 0, \beta_3 \geq 0$

Source derived Maingi (2010)

3.4 Data Collection

The research study used secondary data from World Development Indicators (WDI) for a panel of 7 selected countries namely, Burundi, Egypt, Kenya, Mauritius, Madagascar, Uganda and Zambia based on the data availability for the period from 2005 to 2023. The research used panel data to analyze the effects of foreign direct investment on economic growth in COMESA countries. According to Cameroon and Trivendi (2005); the panel data approach has the advantage as it makes the sample size large, which provides a good basis for obtaining more precise estimates. It can also facilitate analysis of common dynamic trends help solve omitted variable and measure individual heterogeneity.

4.0 RESULTS AND DISCUSSION

4.1 Diagnostic Test

4.1.1 Panel Unit Root Test

Table 4.1 Im pesaran shin panel unit root test

VARIABLE		CONSTANT WITHOUT TREND	ORDER	CONSTANT +TREND	ORDER
Gross domestic product	LEVEL	-2.8616 (0.0021)	I(0)	-1.0897 (0.1379)	I(1)
	1ST Diff			-3.3713 (0.0004)	
Foreign direct investment	LEVEL	-1.3049 (0.0960)	I(1)	-1.3752 (0.0845)	I(1)

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		-5.3356 (0.0000)		-3.6906 (0.0001)	
Gross capital formation	LEVEL	-0.9989 (0.1589)	I(1)	0.6974 (0.7572)	I(1)
		-4.5728 (0.0000)		-3.5399 (0.0002)	
Infrastructure development	LEVEL	1.2274 (0.8902)	I(1)	-0.7954 (0.2132)	I(1)
		-4.6974 (0.0000)		-3.5211 (0.0002)	
Inflation rate	LEVEL	-2.3597 (0.0091)	I(1)	-1.1115 (0.1332)	I(1)
	1^{ST} Diff	-6.5332 (0.0000)		-5.0036 (0.0000)	
Population growth	LEVEL	-0.8955 (0.1853)	I(1)	-1.5783 (0.0573)	I(1)
	1^{ST} Diff	-2.8326 (0.0023		-0.6092 (0.2712)	
Public expenditure	LEVEL	-1.3493 (0.0886)	I(1)	-1.4948 (0.0675)	I(1)
	1^{ST} Diff	-6.4273 (0.0000)		-5.5402 (0.0000)	

Source: Research data

According to the Im Pesaran and Shin test results presented in the table 4.1 shows that the test statistics constant without trends for variable gross domestic product was statistically significant at one per cent level. This implies that this variable is stationary at levels. However, test statistics for the variables public expenditure, population growth, infrastructure development, gross capital formation, foreign direct investment and inflation rate were not statistically significant. This suggests that these variables were not stationary at levels and had to be differenced at least once for them to become stationary.

According to the IPS test results constant plus trend the test statistics for the variables none was stationary at level .Thus, the test statistics for all variables in IPS constant plus trend for the variables were not stationary at levels and had to be differenced at least once for them to become stationary. Variables that could be considered not to be stationary at levels in accordance with IM Pesaran & Shin test were differenced once and then become stationary suggesting that they were integrated of order one I (1). Thus, panel unit root test results in table 4.1 shows that variables in the model have a mixed order of integration. Some variables were integrated of order one I (1) while others order I (0).

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4.1.2 Multicollinearity

Table 4.2 multicollinearity results of FDI and economic growth

Variable	VIF	1/VIF
Population Growth	5.22	0.191719
Infrastructure Development	5.08	0.196717
Foreign Direct Investment	1.31	0.764672
Inflation	1.19	0.842701
Public Expenditure	1.15	0.867435
Gross Capital Formation	1.01	0.986736
Mean VIF	2.49	

Source: Research data

Multicollinearity test was conducted by accumulating the VIF for each variable and the results are presented in table 4.2. Clearly, multicollinearity was not a problem since the VIF for all the variables were less than 10 and above indicates the absence of multicollinearity problem.Schofied (2015) & Kibet (2022) opines that presence of multicollinearity among the explanatory variables in a regression model is unacceptable since high correlation makes it difficult to determine the individual contribution of each of the independent variables to the dependent variable and potentially affect the estimate of regression coefficient and the statistical significance tests.

4.1.3 Heteroscedasticity test

Table 4.3 Heteroscedasticity test of FDI and economic growth

Breusch-Pagan Cook-Weisberg test for heteroskedasticity			
Ho: Constant variance			
Variables: fitted values of gdp			
chi2(1) = 77.00			
Prob > chi2 = 0.0000			

Source: Research data

The main assumption in regression analysis is that the variance of the error term is homoscedastic across all observations. When heteroscedasticity is present, ordinary least squares estimators become biased and inconsistent, and inefficient and when the standard errors are inconsistent, invalidating statistical tests, (Breusch & Pagan, 1979).The null hypothesis for Breush – Pagan/Cook – Weisberg test is that there is no constant variance (variance is not homoscedastic). Results in table 4.3 indicates probability of chi (2) of 77.00 with a p-value of 0.000. That is prob > chi(2) = 0.000 implying that the null hypothesis was rejected and therefore there is no constant variance indicating the presence of heteroscedasticity in the model.

4.1.4 Panel Cointegration test

Table 4.4 Panel Cointegration Test Results of FDI and Economic Growth

Kao Residual Cointegration Test		
Series: LNGDP LNFDI LNGCF LNFTS LNINFL LNPOPLN LNGGFCE		
Date: 08/21/25 Time: 12:37		
Sample: 2005 2023		
Included observations: 133		
Null Hypothesis: No cointegration		
Trend assumption: No deterministic trend		
Automatic lag length selection based on SIC with a max lag of 2		
Newey-West automatic bandwidth selection and Bartlett kernel		
	t-Statistic	Prob.
ADF	-5.121252	0.0000
Residual variance	0.014629	
HAC variance	0.014445	

Source: Research data

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The panel cointegration test conducted was aimed at investigating whether there was more than a single cointegrating relationship amidst foreign direct investment and economic growth variables in COMESA countries. The Kao residual panel cointegration test exhibited rejection of null hypothesis of no cointegration for all the panel data sets, hence suggesting long run cointegration amid foreign direct investment and economic growth. The Kao residual cointegration test ADF was 0.000 which was significant. The null is no cointegration and alternative hypothesis cointegration exists. Thus we rejected the null and accepted the alternative.Acccording to Enders (1995) the evidence of cointegration amid the variables implies no spurious correlation.

4.1.5 Hausman test

Table 4.5 Hausman test results of FDI and economics growth

. Hausman Fixed Random				
---- Coefficients ----				
(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))	
S.E.	**Fixed**	**Random**	**Difference**	
lnfdi	.0747859	.0821838	-.0073979	.
lngcf	.0664819	.0740102	-.0075283	.
lnfts	-.1077508	-.0755751	-.0321757	.
lninfl	-.1173976	-.1212644	.0038668	.
lnpopln	-.0793766	-.103882	.0245054	.
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha, efficient under Ho; obtained from xtreg				
Test: Ho: difference in coefficients not systematic				
chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)				
= 1414.56				
Prob>chi2 = 0.0000				
(V_b-V_B is not positive definite)				

Source: Research data

Table 4.5 above was the Hausman specification test which showed that fixed effect model was the preferred model. However random effect was selected model because it gives better results. The hausman test indicated probability of 0.0000 which was statistically significant. The probability was significant implying that we shall reject the null hypothesis and accept the alternative hypothesis. Thus the random effect model was the preferred and selected model.

4.2 Regression analysis

4.2.1 Random effect model

Table 4.6 Random effect model results of FDI and economic growth

Random-effects GLS regression		Number of obs = 121				
Group variable: id		Number of groups = 7				
R-sq:		Obs per group:				
within = 0.2989		min = 13				
between = 0.3766		avg = 17.3				
overall = 0.2550		max = 19				
Wald chi2(5) = 45.61						
corr(u_i, X) = 0 (assumed)		Prob > chi2 = 0.0000				
lngdp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnfdi	.0821838	.0196484	4.18	0.000	.0436737	.1206938
lngcf	.0740102	.1489579	0.50	0.619	-.217942	.3659624
lnfts	-.0755751	.0369996	-2.04	0.041	-.148093	-.0030573
lninfl	-.1212644	.0444434	-2.73	0.006	-.2083719	-.0341569

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lnpopln	-.103882	.0471912	-2.20	0.028	-.1963751	-.0113889
_cons	5.513032	.6417361	8.59	0.000	4.255252	6.770812
sigma_u	.69371418					
sigma_e	.24269456					
rho	.890953 (fraction of variance due to u_i)					

Source: Research data

4.2.1.1 Foreign direct investment and economic growth

The study main objective sought to investigate the effect of foreign direct investment on economic growth in COMESA selected countries. Thus the hypothesis under study stated that foreign direct investment does not affect economic growth in COMESA countries. Results of random effect regression model of Table 4.6 above indicated that natural log of foreign direct investment has positive and significant relationship with natural log of economic growth which was statistically significant at one percent level of significance. The natural log of FDI coefficient is 0.0821838.This denotes that a one percentage change in FDI increases economic growth by 0.0821838 percent. Results are consistent with Ruto (2021) whose findings found that foreign direct investment has a positive and significant effect on Kenya's manufacturing exports to COMESA countries.

Results are also in tandem with Jongwanich (2010) and Ocharo (2013) who found positive effect of FDI on economic growth in Kenya, Souwaluck (2012), Mwita (2022) and Vinh vo(2009).However results are contrary to Mugun (2021) whose results confirmed a negative and statistically insignificant relationship with economic growth. Also findings are not in tandem with Carkovic and Lavine (2003) who found that foreign direct investment has no effect on economic growth in micro and other recipient countries. From the study results the study therefore, rejects the null hypothesis and accepts the alternative hypothesis which states that foreign direct investment affects economic growth in COMESA countries. Also, natural log of gross capital formation had a positive and insignificant relationship with natural log of economic growth. This implies that gross capital formation does not play any role in determining economic growth.

Natural log of infrastructure development had a negative and statistically significant relationship with natural log of economic growth. The coefficient was -0.07558 which implies that a one percentage change of infrastructure development reduces economic growth by 0.07558 percent. Results are inconsistent with Ghafoor (2014) whose empirical results showed positive relationship between infrastructure development and economic growth in Pakistan.

Inflation rate had a negative and statistically significant relationship with economic growth. The coefficient was -0.121264 indicating that a one percentage change in inflation rate reduces economic growth by 0.121264 percent. Results are consistent with Saadatu *et al* (2025) whose results revealed a statistically significant negative effects of inflation rate on GDP growth in the business cycles. Findings also are in tandem with Fischer (1993) and Barro (1995) who found that inflation harms growth when it surpasses moderate levels. Also in tandem with Muritala (2011).

Natural log of population growth had a negative and statistically significant relationship with natural log of economic growth. The coefficient was -0.103882, implying that a one percentage change in population growth rate reduces economic growth by 0.103882 percent. Results are consistent with Abdullah *et al* (2015) who found that economic growth and population are negatively correlated in Bangladesh. Findings also are in agreement with those of Martin (2009), Olabiyi (2014) and Afzal (2009).

5.0 CONCLUSION

The main objective of the study was to examine the effect of foreign direct investment on economic growth in COMESA countries. Results of random effect regression model indicated that natural log of foreign direct investment has positive and significant relationship with natural log of economic growth which was statistically significant at one percent level of significance. The study concluded that FDI in COMESA region plays a significant role in accelerating growth though faced by several limitations hindering its stimulation and expansion. The study used annual data for a panel of 7 countries; Burundi, Egypt, Kenya, Mauritius, Madagascar, Uganda and Zambia for the period from 2005 to 2023.The following study variables were involved; economic growth proxied by the gross domestic product per capita,foreign direct investment, gross capital formation,infrustructure development, population growth, inflation and public expenditure. The study included a comprehensive literature review on population and sampling design on the

effect of foreign direct investment on economic growth in COMESA countries. Endogenous growth model was the theoretical framework adopted for the study.

5.1 Policy Recommendation

COMESA countries should accelerate economic growth through enhanced regional integration in order to attract the market –seeking FDI. A country with a large market as indicated by high economic growth rate has a greater ability to consume the production capacity established by the inflows of FDI.COMESA region additionally, thus should continue to promote growth of COMESA region that will widen the markets for goods and services and hence attract FDI.Finally, there is need of improving transport, communication and other infrastructural facilities so as to facilitate trade among the COMESA countries and globally.

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