Analysis of Trade Liberalization and Economic Growth in Selected African Countries

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Abstract
This study examined the linear association between Trade Liberalization and Economic Growth in African Countries over the period 1981–2021. Using a panel data set on a sample of five selected African countries i.e. Nigeria, Ghana, South Africa, Morocco and Kenya by using data from the World Development Indicators. The mixed order of integration from the stationarity test underpins the adoption of Panel Autoregressive Distributed Lag (ARDL. The results revealed trade to have a positive and significant impact on economic growth in the sample African countries. The result showed that a 1% increase in trade openness will increase the economic growth in the selected African countries by 1.5%. The short-run country-wise result revealed that Trade is positively impacting economic growth in Nigeria and negatively related to growth in Ghana. The study recommended that African countries should formulate more structural reforms that would encourage greater openness of their economies in order to promote long term economic growth.

Keywords: Trade Liberalization; Panel Autoregressive Distributed Lag (PARDL) Pooled Mean Group (PMG); Mean Group (MG).
JEL Classification: F1; F6

Introduction

After the liberalization of external trade by some African countries, capital flows in the form of FDI to developing countries has continued to improve. The growth of the economy in these countries has however, not kept match with the pace. Trade liberalization has been a key economic policy and transformational reform mostly considered and adopted by countries of the world to stimulates and enhance the overall growth of its trade with international community. Trade openness aims at removing all barriers of trade between economies as well as achievement of greater openness and greater integration of the world economy (Harberzar, 2014). Liberalization refers to a shift from policy controls and regulatory measures to allowing market forces works toward free-resource allocation and price fixing in an economy.

There is unresolved discuss on the nexus between free-trade and economic growth in economic literature, while some scholars arguing that trade promote economic growth especially in developing countries. To them, trade made it possible for some developing countries in Southern Asia and transitional economies to grow their economy and compete with developed economies in the world market (Ejike et al, 2018). However, Grossman and Helpman (1990) argue that nation that tolerate high level of trade liberalization outperform nations with higher trade restriction and that openness allow for the multiple choices of commodities that are capable of improving consumer welfare. There are arguments that nullify the effects of openness on economic growth; they argue that developing countries in Africa have been unfortunate to experience degeneracy of growth due to higher liberalization policy (Esu & Udonwa, 2015).

Despite these conflicting views, the universal opinion is that trade liberalization is beneficial to economic growth. Given the success storyline of trade liberalization policy, the pertinent question is; to what degree does trade-liberalization policies contribute to economic growth of developing countries of Africa with distinctive level of income and trade openness? Relying on the partial protectionism proposed by Kim and Lin (2009) and the peculiar nature of African's economic environment of poor development of human mind and financial system with potential of hindering positive gains of trade liberalization.

Literature Review

Conceptual Review

The Concept of Trade Liberalization

Trade liberalization refers to policies that allow the unrestricted flow of goods and services to and from any given country (World Trade Organization, 2011). For a country to be considered "liberalized", that country must be actively engaged in becoming more "open" to trade. In order to become economically open, a country's government must institute and uphold policies enabling their economic sector to become less restrictive in the flow of goods and services. A country with effective trade liberalization policies will be more open to trade than those without. Essentially, the measure of the effectiveness of trade liberalization is in fact the effect that those policies have on tariff and non-tariff barriers. That having been said, to avoid any confusion, trade liberalization and trade openness can and will be used interchangeably in this study. In his work, From Free Trade to Managed Trade, Chakravarthi Raghavan (2004) posits the specific conditions of trade liberalization including reducing tariffs and residual quantitative restrictions as well as taking measures to reduce non-tariff barriers associated with a country's imports and exports. Non-tariff barriers include, but are not limited to, import quotas, voluntary export restraints, export subsidies, technical barriers, countervailing techniques, and restrictive state- trading interventions (Beghin, 2006).

The Concept of Economic Growth

Jhingan (1997) described economic growth as "the process whereby the real per capita income of a country increases over a long period of time." Economic growth is measured by the increase in the amount of goods and services produced in a country. A growing economy produces more goods and services in each successive time period. Thus, growth occurs when an economy's productive capacity increases which, in turn is used to produce more goods and services. Also Todaro, (1999) view economic growth as simply the increase overtime of an economy's capacity to produce those goods and services needed to improve the wellbeing of the citizens in increasing numbers and diversity. It is the steady process by which the productive capacity of the economy is increased overtime to bring about rising levels of national income.

Roger (1991) defined economic growth as the expansion of the economy to produce more goods, jobs and wealth. Economic growth is an expansion of a country's potential GDP or national output. This means that economic growth occurs when a nation's production possibility frontier shifts outward. Economic growth is a dynamic process in which the supply, demand and efficiency factor all interest.

For the purpose of this study, the definition of economic growth given by Dornbusch (1994) will be adopted as the working definition. He defines economics growth as the expansion of productive capacity of an economy over time which requires an increase in natural resources, human resources capital and technology.

Theoretical Framework

On the other hand, the absolute advantage theory, the comparative advantage theory and the Heckscher-Ohlin theory provide the basis for mutually beneficial trade between countries as they engage in international trade. The contribution of trade to growth varies depending on whether the force of comparative advantage directs the economy's resources towards activities that generate long-run growth or away from such activities. Moreover, theories suggest that, due to technological or financial constraints, less-developed countries may lack the social capability required to adopt technologies developed in more advanced economies. Thus, the growth effect of trade may differ according to the level of economic development. Despite its potential positive effect on growth, some theoretical studies claim that international trade may hamper growth (Young, 1991; Lucas, 1988). For Redding (1999), Young (1991), and Lucas (1988), opening up to trade might actually reduce long-run growth if an economy specializes in sectors with dynamic comparative disadvantage in terms of potential growth or where technological innovations or learning by doing are largely exhausted. For such economies, selective protection may foster faster technological advances and economic growth.

Empirical Review

Onifade et al. (2022) evaluates the impact of trade openness on the economic performances of selected Middle East and North Africa (MENA) countries. The study is based on the framework of the Fully Modified Ordinary Least Square (FMOLS) and the Dynamic Ordinary Least Square (DOLS) regression techniques. Trade openness was found to be negatively impacting economic growth for the period of the study.

Genesis (2022) examines the relative effects of trade in goods and trade in services on economic growth for thirteen (13) ECOWAS member countries between 2000 to 2017. Applying the Fully Modified Ordinary Least Squares (FMOLS) and the Dynamic Ordinary Least Squares (DOLS), we found that both Goods and Services Trade positively influence economic growth.

Odebode (2022) investigating the extent to which trade policies such as trade liberalisation and tariff rates matter to trade performance using the case of Sub-Saharan Africa (SSA). By exploring mean group (MG) and pooled mean group (PMG), the result found that increasing tariffs has the potential of particularly worsening export growth in SSA but increasing openness via liberalisation policy is likely to spur decline in the import dependence of the SSA economy.

Wanger and Aras (2022) Investigate the relationship between globalisation and economic growth in West Africa from 1960–2019. In this study panel cointegration techniques including fully modified ordinary least squares, dynamic ordinary least squares and dumitrescu-hurlin panel causality test were applied. The finding revealed a positive and significant long run causal relationship between exports, imports as aspects of globalisation and gross domestic product.

Innocent et al (2020) investigates the association between trade liberalization and economic growth in Nigeria from 1981 to 2018. The study used the Autoregressive Distributed Lag Bounds technique to cointegration. The results showed that trade liberalization do not support economic growth in Nigeria.

Claire Emilienne and Joseph (2020) explores the relationship among trade openness, economic growth and poverty level in 40 sub-Saharan Africa countries from 1990 to 2017. Panel Autoregressive Distributed Lag (ARDL) model, Panel Vector Auto-regression (VAR) and the System of Generalised Method of Moments (SYS-GMM) were employed. The results revealed that trade openness significantly increase economic growth in the long term.

Adekunle and Olusegun (2020) analyzed the link between trade liberalization and manufacturing sector of Nigeria from 1986 to 2018. Autoregressive Distributed Lag (ARDL) and Pairwise Granger Causality econometric techniques were used for the analysis. The findings revealed the existence of dynamic relationship between output of manufacturing sector and trade liberalization. Also, it was found that trade liberalization exerted indirect and significant impact on productivity of manufacturing sector while the causality findings indicated independent causality linking trade liberalization to output of manufacturing sector in Nigeria.

Afolabi (2020) examined the impact of financial liberalization and trade openness as well their interactive effects on the growth of the Nigerian economy for the period, 1981 to 2018. Johansen cointegration and the dynamic ordinary least square (DOLS) test was employed. The results reveal that trade openness, as well as its interaction with financial development, do not exert any significant impact on economic growth in Nigeria.

Odebode (2020) explore the extent to which trade policies such as trade liberalisation and tariff rates matter to trade performance using the case of Sub-Saharan Africa (SSA) for the period of 1993 to 2019. Using the dynamic non-stationarity panel data estimators namely, mean group (MG) and pooled mean group (PMG), the revealed that increasing tariffs has the potential of worsening export growth in SSA but increasing openness via liberalisation policy is likely to spur decline in the import dependence of the SSA economy.

Stephen and Waldo (2020) analyze the impact of trade liberalization on firm productivity growth in Kenya’s manufacturing sector for 8 years from 1992-1999. Using a regression framework. The findings reveal that liberalizing trade generates high productivity improvements in the manufacturing sector.

Khadija et al. (2020) examine the impact of trade liberalisation on economic growth and volatility of macroeconomic variables for European economies from 1960 to 2018. For this purpose, this study divided the data set in two different groups based on joining the European Economic Community has used annual time series data from 1974-2018. By applying the ARDL technique, the findings show a stable long-run association between financial and trade liberalization with economic performance in Pakistan.

Methodology

Data and Sources

Secondary data sources are utilized in this study. The data covers the annual panel data set from 1980 to 2021 with annual frequency for five countries i.e. Nigeria, Ghana, South Africa, Kenya and Morocco respectively. For all the sample countries (N = 5). The sources of the data are the World Bank (Development Indicators) and African Development Bank (Development Outlook). All the data were accessed through internet on their respective websites. The dependent variable in our empirical analysis is economic growth, defined real GDP, while trade openness (TOP) proxy for trade liberalization, money supply, exchange rate and government expenditure are the explanatory variable of interest. These are the key variables generally employed in the literature

Model specification

In examining effect of trade liberalization on economic growth of African ountries, the model specified is similar to Naeimeh (2017) whose model is specified as follows;

$\Delta lnY_i,t = a\Delta lnY_i,t\text{-}1 + \beta_1\Delta lnTRADE_i,t + \beta_2\Delta lnTARIFF_i,t + \Delta\varepsilon_i,t$ ……………………………… (3.3)

Where ΔlnY$_i$,t: Growth rate of impure GDP per capita; ΔlnY$_i$,t-1: Growth rate of GDP per capita with gap; ΔlnTRADE$_i$,t: the growth rate of total trade (imports and exports of goods and services); ΔlnTARIFF$_i$, t: tariff growth rates on international trade. This model is modified to include other relevant variables as follows;

$log\ RGDP\ it = \beta 0 + \beta 1 \quad T\ OPit, \beta 2 logMSit + \beta 3 EXRit, +\beta 4\ log\ GE\ it + \mu it)$…… (3.4)

Theoretically, the coefficients of equation (3.4) are expected to take the following signs: β1, β2,> 0,β3< 0β4,> 0 i.e *TOP* and *logMS* and *logGE* are expected to positively influence economic growth while EXR valuation is expected to negatively affect *logRGDP*.

where *logRGDP* represents economic growth, *TOP* represent trade openness, *EXR* stands for exchange rate. The *logRGDP* and *logGE* were logged as a result of their highly skewed values.

Estimation Technique

Descriptive Analysis

The data were analyzed using descriptive statistics to identify the mean, standard deviation, minimum and maximum values. This helps to identify any abnormality with the data and thus ensure that the data are normal and suitable for analysis.

Panel Unit Root Test

The purpose of unit root test is to confirm the nature of the variables before the actual analysis. The rationale for testing data for stationarity is to be sure that there is no any form of shock that would throw the series out of its long-term equilibrium. Hence, Levin, Lin and Chu (LLC) test, Im Pesaran and Shin (IPS). Is used in this study.

Panel Autoregressive Distributed Lag (PARDL) for Model

This symmetric modelling is also based on Pesaran et al. (1996) and Pesaran et al. (2001). We first estimate the linear panel ARDL to determine the linear impact of trade liberalization on economic growth of the selected economies. The linear panel ARDL representation is written as follows, as stated by Pesaran et al. (2001):

$$\begin{aligned}\Delta \log RGDP_{it} &= \beta_{0i} + \beta_{1i} \log RGDP_{i,t-1} + \beta_{2i} \log TOP_{i,t-1} \\ &+ \beta_{3i} \log MS_{i,t-1} + \beta_{4i} EXR_{i,t-1} + \beta_{5i} \log GE_{i,t-1} + \sum_{j=1}^{p1} \phi_{ij} \Delta \log RGDP_{i,t-j} \\ &+ \sum_{j=1}^{p3} \phi_{ij} \Delta \log TOP_{i,t-j} + \sum_{j=1}^{p4} \phi_{ij} \Delta \log MS_{i,t-j} + \sum_{j=1}^{p5} \phi_{ij} \Delta \log EXR_{i,t-j} \\ &+ \sum_{j=1}^{p4} \phi_{ij} \Delta \log GE_{i,t-j} + \mu_{it}\end{aligned}$$

…………………………….. (3.11)

Where Δ is the first difference operator, $\beta 0i$ is a constant, ϕij (s =1, 2, 3, 4, 5) are the short-run Coefficients, βki (k =1,2,3,4,5) are the long-run coefficients and μit is an error term. The optimal lag orders on the first-differenced variables are selected according to the Schwarz information criterion (SIC) or the Akaike information criterion (AIC). The linear equation could be re-formulated to include an error correction term as follows:

$$\begin{aligned}\Delta \log RGDP_{it} &= \beta_{0i} + \beta_{1i} \log RGDP_{i,t-1} + \beta_{2i} \log TOP_{i,t-1} + \beta_{3i} \log MS_{i,t-1} \\ &+ \beta_{4i} EXR_{i,t-1} + \beta_{5i} \log GE_{i,t-1} + \sum_{j=1}^{p1} \phi_{ij} \Delta \log RGDP_{i,t-j} \\ &+ \sum_{j=1}^{p3} \phi_{ij} \Delta TOP_{i,t-j} + \sum_{j=1}^{p4} \phi_{ij} \Delta MS_{i,t-j} + \sum_{j=1}^{p4} \phi_{ij} \Delta \log EXR_{i,t-j} \\ &+ \sum_{j=1}^{p3} \phi_{ij} \Delta \log GE_{i,t-j} + \lambda_i ECT_{i,t} + \mu_{it}\end{aligned} \quad \text{.... (3.12)}$$

where the $ECTi, -j$denotes the symmetric error correction term for each unit derived from the long-run relationship. The parameter λ measures the error-correcting speed of adjustment of the model to long run equilibrium for each unit derived.

Result and Discussion

Panel Unit Root Test

Before Proceeding with the real panel ARDL estimation, we decided to test the nature and order of the variables included in the study by employing the different types panel unit root tests: Levin, Lin and Chu (LLC) test, Im Pesaran and Shin (IPS) Panel unit root test were used to test for the order of the integration of the variables. The result for these tests are reported on Table 4.1. Based on the LLC test results, the test revealed that logGDP, FDI, logDI and logGE are stationary at level (I0) whereas EXR is stationary at first difference. However, under the IPS test only EXR is stationary at first difference while FDI, logGE, logGDP, logDI are all stationary at level. With these mixture in the order of the variables, the use of the panel ARDL has therefore been validated.

Table 4.1: Panel Unit Root Test

Variables	**LLC**		**IPS**	
	Intercept	Intercept + Trend	Intercept	Intercept + Trend
	At Level			
logGDP	-0.4710	-5.7583	-4.3218	-1.8990
	(0.8340)	(0.0361)**	(1.0000)	(0.0288)**
TOP	-4.1975	-5.2256	-1.4899	-2.4833
	(0.0586)*	(0.1353)	(0.0681)*	(0.0065)**
MS	-1.6222	-5.0258	1.3159	-1.8920
	(0.4612)	(0.2688)	(0.9059)	(0.0292)**
EXR	-0.4533	-3.7457	3.6994	-0.5516
	(0.9855)	(0.3387)	(0.9999)	(0.6955)
logGE	-0.9656	-6.2521	3.6647	-1.8714
	(0.6043)	(0.0208)**	(0.9999)	(0.0306)**
	At First Difference			
logGDP	-9.2395	-9.3697	-6.8790	-6.6637
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0000)***
TOP	-12.4903	-12.8847	-8.5897	-8.5244
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0000)***
MS	-10.3233	-10.3938	-8.0705	-8.0945
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0000)***
EXR	-8.5298	-9.5193	-6.6637	-5.1115
	(0.0009)***	(0.0428)**	(0.0000)***	(0.0000)***
logGE	-10.1722	-10.2227	-6.9122	-6.8493
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0000)***

*Source: Researcher`s computation using Stata software 15 (2023). ***, ** and * indicate significance at 1%, 5% and 10% level respectively.*

Lag selection Criteria

To estimate the Panel Autoregressive Distributed Lag (p,q,q,q) econometric model, we first of all have to need to observed and estimate the optimal lag length. We therefore use the Akaike information criterion (AIC) to determine the optimal lag structure. The optimal model is the one with the smallest value of AIC. The Optimal lag selection using Akaike information criterion (AIC) are as follows; LogGDP 1, TOP 1, MS 1, EXR 1 and LogGE 1. Table 4.2 present the optimal lag selection order for AIC. As presented on the table ARDL (1 1 1 1 1) has the smallest value of AIC and therefore is the most appropriate model for this study. We use the unrestricted model and the Akaike information criterion (BIC), to determine the optimal choice of lags for each country and per variable. We then choose the most common lag for each variable to represent the lag of the model. The optimal lag selection is done to avoid serial correlation both in the stationary test and in the ARDL model.

Table 4.2 Lag Selection Criteria (AIC)

Variables	Optimum Lag
LogGDP	**1**
TOP	**1**
MS	**1**
EXR	**1**
LogGE	**1**

Source: Researcher`s computation using Stata software 15 (2025).

Panel ARDL Result

Having examine the nature of the variables through the unit root test and it was discover that, the variables are a mixture of I(0) and I(1) the use of Panel ARDL is therefore justified. The model was therefore employed to examine impacts of Trade liberalization on the economic growth of five selected African countries. The panel ARDL model specified in equation (3.4) and (3.5) were estimated using Pooled Mean Group (PMG) and Mean Group (MG) estimators to estimate both long-run and the short-run coefficients. As express from Table 4.3 below, the result from the Hausman Test, the null hypothesis is accepted because the Hausman Test probability value of 7.02(0.1348) is insignificant. This suggests that Pooled Mean Group (PMG) is more efficient and is preferred over the Mean Group (MG). This study will therefore utilize Pooled Mean Group (PMG) as the method of analysis.

From the Table 4.3, the coefficients of error correction term was found to be negative and statistically significant at 1% level of significant, this is also in line with theoretical expectation. This is a prove that there is a long-run relationship between logGDP, TOP, MS EXR and logGE in the selected African countries. The ECT value is -0.0887. This implies that the disequilibrium from the short-run is adjusted at the speed of 8% every year until the long-run equilibrium is achieved.

Evidence from the respective coefficients of the explanatory variables explained their relationship with the dependent variable. The ARDL-Pooled Mean Group estimator revealed that, all the independent variables TOP, MS EXR and logGE have a positive relationship with economic growth and are statistically significant statistically at 5%, 1% 1% 1% respectively. This is in conformity with the priori expectation of the study. This means that trade liberalization and government expenditure have a long-run impact on the economic growth of the selected African countries.

From the long run coefficients. Trade openness has positive impact on the economic growth of the selected African countries. The result show that for every 1% increase in trade openness, economic growth of the selected African countries will increase by 1.5%. Government expenditure also revealed a positive relationship with economic growth in the selected African countries. The result implies that if government expenditure increased by 1%, economic growth will increase by 2.0% in selected African countries. On the other hand, money supply exhibits a negative but statistically significant relationship with economic growth meaning 1% increase in money supply will reduce economic growth by 3% in selected African countries.

On the other hand, the PMG short-run coefficients show that trade liberalization is negative and statistically insignificant while money supply is negative and also statistically significant at 10%, which means that if money supply increase by 1% economic growth will decrease by 0.07 % million. However, government expenditure has a positive and statistically significant impact in the short-run at 5% level of significant. This implies that if there is a 1% increase in government spending the economy of the selected African countries will increase by 3.9%. More so the shorn-run coefficient of exchange rate is negative and statistically significant.

Table 4.3 Panel ARDL Result

Dependent Variable Log of Real Gross Domestic Product (RGDP)				
	Pooled Mean Group (PMG)		Mean Group (MG)	
Independent Variables	Long-run coefficients	Short-run coefficients	Long-run coefficients	Short-run coefficients
TOP	0.0153 (0.030)**		0.0120 (0.040)**	
MS	-0.0243 (0.006)***		-0.0136 (0.177)	
EXR	-0.0058 (0.002)***		-0.1401 (0.323)	
logGE	0.2030 (0.000)***		1.1801 (0.000)***	
ΔTOP		-0.0015 (0.446)		-0.0024 (0.150)
ΔMS		-0.0079 (0.099) *		-0.0073 (0.076)*
ΔEXR		-0.0288 (0.047)**		-0.0206 (0.138)
ΔlogGE		0.3957 (0.000)***		0.2959 (0.007)***
Ect		-0.0881 (0.011) **		-0.2152 (0.000)***
Hausman Test	(0.1348)			
No. of Observations	200			
Number of Countries	5			

*Source: Researcher`s computation using "PMG" package in Stata software 15 (2023). Figures in parenthesis are probability values together with the associated coefficients, ***, ** and * indicate significance at 1%, 5% and 10% level respectively.*

Individual Short Run Result for Pooled Mean Group (PMG)

One advantage of the PMG estimator lies in its ability to take into account the heterogeneity of each country and also its ability to estimate individual country`s short run dynamics.
Table 4.4 present the short-run coefficients of the observed variables of the selected African countries by considering the specific attributes of these countries. As expressed on the result, As shown on the result, Trade openness as a measure of trade liberalization have a positive and effect on economic growth in Nigeria, Morocco, South Africa and Kenya. However, this effect is only statistically significant in Nigeria at 1%. This implies that a 1% increase in trade openness in Nigeria will increase in economic growth by 0.03%. The impact of trade on Ghana

is negative and statistically significant at 1% implying a one 1% increase in trade openness in Ghana will lead to decrease in economic growth by 0.07%.

Money supply has a negative and significant relationship with economic growth in Ghana, Nigeria and Morocco. The result implies that a 1% increase in money supply will decrease economic growth by 1.8% in Ghana, 0.03% in Nigeria and 1.8% in Morocco.

Table 4.4 Individual Short Run Result for Pooled Mean Group (PMG)

Dep. Var. RGDP	Ghana	Nigeria	Morocco	South Africa	Kenya
TOP	-0.0070	0.0037	0.0007	0.0006	0.0010
	(0.000)***	(0.0020)*	(0.505)	(0.810)	(0.472)
MS	-0.0188	-0.0039	-0.0187	-0.0187	0.0009
	(0.000)***	(0.204)**	(0.000)***	(0.041)**	(0.666)
EXR	-0.0549	-0.0012	-0.0798	-0.0013	-0.0179
	(0.334)	(0.047)	(0.000)***	(0.252)	(0.108)
logGE	0.3150	0.6639	0.3157	0.1776	0.9037
	(0.000)***	(0.000)***	(0.004)***	(0.001)***	(0.000)***

*Source: Researcher`s computation using "PMG" package in Stata software 15 (2023). Figures in parenthesis are probability values together with the associated coefficients, ***, ** and * indicate significance at 1%, 5% and 10% level respectively.*

Diagnostic Checks

The result of the test indicated that there is no cross-sectional dependence among the observed variables as seen on Table 4.5. where the probability value is greater than 5% i.e 0.3743. Table 4.5 shows the VIF values of the observed explanatory variables of the study which are less than 4.5. Therefore, this is an evidence to prove that there is no multicollinearity among the independent variables. The results indicate that the model is free from heteroscedasticity issues utilizing the Breusch-Pagan test, which reveals an insignificant value at 0.3743. Durbin Watson Test for Autocorrelation has also been estimated and it was found that the estimate is free from autocorrelation.

Table 4.5: Diagnostic Tests

Tests	VIF	Prob.
TOP	1.49	
EXR	1.36	
MS	2.64	
logGE	2.15	
Pesaran CSD Test	0.888	(0.3743)
Breusch Pagan test for Heteros.	10.4	(0.3081)
Durrbin Watson *Test for Autocor.*	1.6623	

Source: Researcher`s computation using Stata software 15(2023). Figures in parenthesis are probability values.

Discussion of Major Findings

Given that some variables are integrated of one while are of order zero, the study decided to employ Panel ARDL technique which utilizes both the Pooled Mean Group (PMG) and the Mean Group (MG) estimators to examine both the long-run and the short-run association among the variables. Panel ARDL was applied to achieve the objective of the study. Mean Group (MG) was detected as the efficient estimator to be use The findings revealed that the error correction term was negative and statistically significant at there is a long-run relationship between logGDP, TOP, MS EXR and logGE in the selected African countries. Evidence from the respective coefficients of the explanatory variables explain their relationship with the dependent variable. The ARDL-Pooled Mean Group estimator revealed that, all the independent variables (TOP, EXR and logGE) except MS have a positive relationship with economic growth and are statistically significant at 5%, 1% and 1%

respectively. This is in conformity with the priori expectation of the study. This means that trade liberalization, exchange rate and government expenditure have a long-run impact on the economic growth of the selected African countries. As shown on the result, Trade openness as a measure of trade liberalization have a positive and effect on economic growth in Nigeria, Morocco, South Africa and Kenya. However, the impact of trade on Ghana is negative and Money supply has a negative and significant relationship with economic growth in Ghana, Nigeria and Morocco.

Conclusion and Recommendations

Foreign direct investment has positive impact in African countries. This implies that, foreign direct investment promotes economic growth in Africa in the long run. While the short-run individual country result revealed that foreign direct investment, have no statistically significant effect the selected individual countries in the short-run.

Similarly, the result of the findings showed that trade liberalization and exchange rate have a long-run impact on the economic growth of the selected African countries. Moreover, the result for the sample countries indicates that trade openness as a measure of trade liberalization have a positive and statistically significant impact on Nigeria and negative impact on Ghana

The findings also revealed that trade openness as a measure of trade liberalization significantly does promote foreign direct investment in Africa in the long run. More so, the result of the individual countries shows that Trade openness as a measure of trade liberalization significant impact only in Ghana.

Given the findings of the study the paper recommends that African countries should vigorously pursue trade liberalization policy such as effort to increase participation in the non-oil sector by investing more in the agricultural- industrial sector to enable this sectors produce more standardized good that can compete in the international market.

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