



DOES TRADE LIBERALIZATION AND INSTITUTIONAL QUALITY STIMULATE ECONOMIC GROWTH IN SUB-SAHARAN AFRICAN COUNTRIES?

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Abstract

This paper examined the nexus between trade liberalization, institutional quality and economic growth in Sub-Saharan African Countries (SSA) Spanning the period 1999-2019. Panel Co-integration and Panel vector error correction mechanism where used as estimation technique to address the heterogeneity and cross-border interdependence. The findings of the study revealed that there is a long run stable co-integration relationship between trade liberalization, institutions and economic growth in Nigeria. Institutional quality can influence significantly economic growth in both short term and long term. The results also suggest that the coefficient of trade liberalization without the interactive effects of institutional quality do not significant impact on economic growth this implies that the impact of trade liberalization on economic growth is not direct one it requires the presences of institutional quality as a mediating variables. The policy implication of this study is that the existence of quality of institution is important for economic growth. Therefore, Sub-Saharan African Countries should develop sound institutions that will support trade liberalization policy and stimulate economic growth.

Key Words: Panel Co-integration, Institutions, Liberalization, Economic Growth and Sub-Saharan African Countries

1. Introduction

Previous empirical evidences have shown that trade liberalization is important factor of improving economic growth (Duru & Ezenwe 2020, Duru et al, 2020 & Duru et al, 2021, Aro Aye 2019, Keho Y. 2017, Qazi 2015, Elijah & Musa 2019). However, the issue of concern with respect to Sub-Saharan Africa is whether Policies that can foster international trade and create economic growth in the absences of institutional quality, market and institutional imperfection can lead sustained growth in the region. In fact as noted by Chang et al (2009), policies that can foster international trade and and integration can only create growth if they are properly managed.

Even though the trade share in GDP of Sub-Saharan Africa has increased from about 40 percent in 1983 to 69 percent in 2008 (an increased in real terms of 6 and 3.3 percent per year. But after the 2008-09 global financial crisis trade

grew at a lower rate than economic activities in Sub-Saharan Africa. This suggests that openness in Sub-Saharan Africa decline by 69 percent of GDP in 2008 to 51 percent in GDP in 2017 (World Bank, 2015)

Therefore, this paper differ significantly from the previous studies by attempting to integrate institutional quality into the trade liberalization and economic growth relationship in Sub-Saharan Africa, since some of the previous studies have suffered a methodological problems of missing variables which may affect the linkage mediating between trade liberalization and economic growth . This paper also contribute by addressing problems of the measurement indicators of trade in the previous studies by introducing more recent composite Institutional quality indexes which help to address the limitations in the under- representation of institutional indicators in Sub-Saharan African. Finally, this study employed the more recent Panel Co- Integration

and Panel causality tests in order to address sample heterogeneity problems and cross-country interdependences by using both time series and cross-sectional data from seven SSA countries namely, (Nigeria, Ghana, Cote, D'Ivoire, Cameroun, Gambia and Boswana, over a period of 1999 to 2019.

The remaining part of this study is structured as follows: The subsequent part of the paper reviews the theoretical and empirical literatures connecting trade liberalization to institutional quality and Economic growth. Section three presents methods and materials of the study while section four presents the results and discussions. Finally section five ends the paper with a summary, conclusion and Recommendations

2. Literature Review

2.1 Theoretical Literature

Theoretically, the issue of whether trade liberalization can lead to increase in economic growth has been an issue of considerable debate. Theorists from both camps have suggested many policies that shape countries decisions. Early proponent in support of Trade liberalization hold the view that trade liberalization can lead to faster economic growth if a country specialized in the production of goods in which they have comparative advantages and participate in international trade with country that can meet to their needs. However, new development theorists hold the view that trade liberalization influence technological advancement leading to innovation and competitions which lead increased in economic growth. On the contrary, the Protectionist theorists hold the view that trade liberalization is detrimental to trade they justified their argument based on protectionist policies against infant industries that requires tariffs and non-tariffs protections.

2.2 Empirical Review

One of the pioneering works in the study of the relationship between trade and economic growth came from the work Iyoha and Okim (2017) which applied panel data of the ECOWAS region through the application of regression analysis in order to ascertain whether international trade affects economic growth within the

region. In their studies they identified a variable which includes per capita real income, total exports, real gross domestic capital formation, and human capital, growth rate of population, nominal exchange rate and inflation. The results of their studies result suggests that exports, exchange rate and investment are significant determinants of per capita real income within the sample of ECOWAS countries. This result contravenes the findings of the work Duru and Ezenwe (2020) Duru et al (2020) and Duru et al (2021) Keho (2017) used the ARDL method and Granger causality test proposed by Toda and Yamamoto in another related study to investigate the effects of openness to trade on economic growth of Cote D'ivoire from 1985 to 2014. Additionally Ajayi and Arooye (2019) employed the vector Error correction model VECM to analyzed the effects of openness to trade on economic growth in Nigeria from 1970 to 2016.

On the country case studies in Sub-Saharan Africa the work of Sanusi (2010) try to examine the linkage between trade openness and economic growth drawing data of selected case study country as well as cross sectional study of some selected sub-Saharan Africa. His study addressed the issues of the indicator of openness by using broader alternatives constructed indicators by Sach and Wanner (1995), in both his cross-sectional analysis and country case study he draw conclusion that trade liberalization is positively correlated with growth. However, the problems with these studies they did not treat the issues of causality between trade liberalization and economic growth, and they omit Institutional variable in their studies.

Yusuf, Malarvizhi, and Khin, (2013) Used the ARDL approach to examine the causal relationships between trade liberalization, growth of the Nigerian economy and poverty applying time series data. Their findings suggest that trade liberalization does not cause poverty reduction, implying that the benefit of trade liberalization does not trickle down to the poor in Nigeria. According to them, this result suggests that countries with high propensity to import and poor commodity prices need to focus on trade policies peculiar to its own environment, which can deliver growth and translate growth into a meaningful poverty reduction.

Babatunde, Jonathan and Muhyideen (2017) applied the Ordinary Least Square (OLS) and examine economic growth, international trade nexus in Nigeria. They includes certain variables such as Growth Domestic product, exchange rate, export, import, government expenditure, foreign direct investment to examine the impact of trade on economic growth. The findings of their studies suggests that government expenditures, interest rate, import and export positively significantly affect economic growth, while exchange rate and foreign direct investment does not significantly in fact on economic growth of Nigeria.

Josheski and Lazarov (2012) using OLS analyzed data from 208 regions and countries to empirically investigate the relationship between trade and economic growth. They discovered that the ratio of trade volume to GDP as a proxy of trade openness has positive effect on economic growth. Also black market premium as a proxy for imbalance in macroeconomic policies has negative effect. In the presence of macroeconomic policies, trade has statistical and economic significant positive influence on growth. Finally, in an institutional environment trade lacks influencing growth; the coefficient on institutions is positive and statistically significant

Mogoe and Mongale (2014) studied the impact of international trade on economic growth in South Africa using the Johansens's co-integration approach and Vector error correction model using variables such as gross domestic product, exchange rate, export, import and inflation. The findings of their studies there exists a long run relationship between the variables under consideration in the model.. Their Empirical investigation reveals that inflation rate, export and exchange rates are positively related to GDP whilst import is negatively related to GDP.

Sakyi (2011) employed the Autoregressive Distributed Lag (ARDL) bounds testing approach to co-integration to investigate the impact of trade openness and the inflow of foreign aid on economic growth in post-liberalized Ghana for the period 1984 to 2007. Their findings suggests nonexistence of short run and long run relationship between labour force, gross domestic investment and government expenditure on economic growth, there is

short run and long run positive impact of economic growth, trade openness and foreign aid on economic growth. Dollar and Kraay (2003,) investigated the effects of trade liberalization and institutions on economic growth and reported that more open economies with better institutions develop faster and countries trade more with better institutions.

3. Methodology

To examine the relationship between Trade liberalization, institutional quality and economic growth, this study used the data collected from seven countries over the period 1999 to 2019. Growth of real GDP per- capita (real GDP per capita in constant price) was used to measure economic growth. We use total trade to GDP ratio to measure trade liberalization; we use institutional quality data to measure Institutions. This comprised to indicators, rule of law and control of corruption. Data were extracted from the WDI (World Bank). Data on Institutional quality were obtain from World Governance Indicators (World Bank)

The common problems with previous studies on panel time series analysis they often assume slope homogeneity or cross-sectional independence, which may lead to incorrect causal inferences. This study aims to improve often on the previous studies in the SSA region by using Panel co-integration and Panel Causality which provide sample heterogeneity and examine the cross- country interdependence. In this case co-integrating vectors are used through the fully modified (FM) OLS approach which take care of the heterogeneity of the coefficients and also allow consistency in the long run relationship with the short- run adjustment. The countries studied are Nigeria, Cameroun Ghana, Gambia, Botswana and Cote d'Ivoire.

3.1 Panel Unit Root Tests

Different approaches for the estimation of a unit root in a panel data has been established with the aim of integrating information from time series data with that of the cross-sectional information. These are classified under the four panel unit root test which is Levin, Lin and Chu (LLC) test, IM, Pesaran and Shin (IPS) test and PP- fisher test. The first generation test was developed by Levin and Lin

(1993) which suffer a number of shortcomings. The problem with this first generation test is that they do not allow for heterogeneity in the autoregressive coefficient. This new generation test was specified as follows:

$$\Delta\beta_i, t = \phi_i + \beta_t + \sum_{j=1}^p \phi_{ij} \Delta\beta_i, t-j + \eta_i, t \quad (1)$$

Where Δ the first difference operation η_i is the random terms and sigma for changes of ϕ^2 , $t = 1, 2, \dots, T$ stand for time period, and $i = 1, 2, \dots, 10$ represents regional cross-time series

This approach made it easy to determine the two dimensional fixed effects (δ and θ) and unit exact period time trends. Levin, Lin and Chu test, includes the first and null hypothesis $H_0: \beta_i = 0$ for all i , which is tested on the opposite under the alternative hypothesis $H_1: \beta_i = \beta < 0$ for all i .

However, the framework, of analysis was extended by the Levin, Lin and Chu (2002) analysis in order to take care of the presence of heterogeneity of the coefficient terms in the alternative hypothesis. While on the other hand, Pesaran and Shin (2003) have compromised the similarity of the first order AR coefficient of the Levin, Lin and Chu test that enable β become not similar along the cross-sectional region in the alternative hypothesis. Both hypotheses are specified as $H_0: \beta_i = 0 < i$, $H_1: \beta_i < 0$ in certain i . While IPS measure is conducted on the basis of the mean group procedure IPS exhibit their approach as appropriate with the finite sample ability when compared with the Levin Lin and Chu approach. The Fisher-ADF test developed by Choi (2001) and the Fisher, PP test developed by Pedroni (1999) used probability by applying an asymptotic Chi-Square approach. One good merit of using the Fisher test, in place of IM Pesaran test, it doesn't need balance panel, it also enable the application of various lag lengths in the separate ADF estimate and can be easily estimated in the case of any derived Unit roots test. The major demerit of the Fisher test lies in the way the Probability- values were established based on Monte Carlo.

Cross- Sectional Panel Co-integration

Pedroni (1999) developed various estimates using residuals found in the work of the Engle and Granger, (1987) Panel co-integration techniques allow the estimation of homogeneity. Because heterogeneous parameters, fixed effects and individual specific deterministic trend are all allowed Pedroni (2004). With this development Pedroni established Seven Panel co-integration statistics, four are known as the pool panel co-integration statistics, and they are categorized within dimension based statistics. While the rest of the three are called mean panel co-integration statistics and they all fall between-dimension based.

Pedroni (1999) pointed out that long time period cases with a number of observations above 100 have a minimum sample size distortion, thereby maintaining a large power of test within the seven statistics in all cases. On the contrary panel with short spans their alternative statistics yield conflicting results. Engle and Granger (1987) pointed out that the group of ADF reveals a better testing power, followed by Panel ADF. But on the other hand, the panel-variance and group p statistics function less effectively in relative to the others.

Panel Vector Error Correction Model

Whenever, a model is found to be co-integrated it indicates the possible existence of causality which is determined through the application of PVECM

$$\Delta\delta_i t = C_i + \sum_{k=1}^p \beta_k \Delta\delta_i, t-k + \lambda_{ec} \delta_i, t-1 + U_i, t \quad (2)$$

Where δ is the vector of variables, comprising the GDP, EX, RLCC While "I" stand for Panel characteristics of cross-country analysis, "ec" stands for the error terms λ_{ui} stand for the rate of adjustment to the long run equilibrium equally?

4. Results and Discussions

Before proceeding to integration and causality test it is imperative to provide the descriptive analysis of the data to ensure whether the data is normally distributed or otherwise. In a situation where the data appear with certain abnormalities the integration order to the data has to be

ensuring in all series. In doing so we estimated the descriptive statistics in table 1 below as well as the unit root test in both level and first difference and the results are presented in tables 2 and 3 below.

Table 1: Descriptive Statistics

	LNGDP	LNEX	RL	CC
Mean	1701.280	17.33646	-0.053063	1617.563
Median	973.9750	14.00000	-1.168828	985.7061
Maximum	8532.617	34.90000	2.439009	8565.656
Minimum	269.9907	0.425000	-1.863972	272.7219
Std. Dev.	1819.814	11.62194	1.549316	1824.730
Skewness	2.202836	0.128556	0.814065	2.207758
Kurtosis	7.356604	1.861378	1.851194	7.361976
Jarque-Bera	163.5597	5.450261	16.88225	164.0945
Probability	0.000000	0.065538	0.000356	0.000000
Sum	153722.9	1568.300	-5.094045	155286.1
Sum Sq. Dev.	2.81E+08	10718.43	228.0360	2.83E+08
Observations	97	97	97	97

Source: Author's Computation Using Eviews 10

Table 1 above indicates that Skewness is not closed to zero on LNGDP and RL, while in the case of LNEX and CC Skewness is achieved. Thus Kurtosis is not closed to three on LNEX and CC and it is greater than three in the LNGDP and RL. This indicates that the data is not

normally distributed. However the probability also reveals that the data is not greater than 5 percent as such the data is not normally distributed this call for the unit root test in order to ensure that the data is co-integrated before its application into estimation.

Table 2: Panel Unit Root Results at Level

	LL	IPS	ADF-Fisher	Pp-fisher
RL	-1.27516 (0.1011)	-0.58884 (0.2780)	12.7764 (0.3855)	14.2748 (0.2835)
LNEX	-2.29915 (0.0107)	2.35794* (0.0092)	17.7229 (0.0234)	19.2979 (0.0133)
LNGDP	-0.06881 (0.4726)	-0.31575 (0.3761)	21.1638 (0.0200)	37.8803* (0.0000)
CC	-1.46401 (0.0716)	-1.12256 (0.1308)	19.0032 (0.0885)	22.0047 (0.0376)

Source: Author's Computation Using Eviews 10

Note: * ** and *** suggest the rejection level at the 10%, 5% and 1% level accordingly.

Table 2 presents the results of the panel unit root test with LLC, IPS, ADF, Fisher and PP- fisher test. The results of the null unit root test at level indicate that the series are not stationary at level with the exception of LNEX which is

significant at IPS and LNGDP at PP fisher. In order to ensure the stationary of the data another unit root test is estimated at first differences which are presented in table 2 below.

Table 3: Panel Unit Root Results at First Difference

	LCC	IPS	ADF-Fisher	PP-Fisher
RL	-12.6132* (0.0000)	-11.1293* (0.0000)	113.416* (0.0000)	127.088* (0.0000)
LNEX	-8.52930* (0.0000)	-8.21637* (0.0000)	59.0147* (0.0000)	59.0076* (0.0000)
LNGDP	-7.62512* (0.0000)	-6.27426* (0.0000)	77.9587* (0.0000)	97.3907* (0.0000)
CC	-12.6504* (0.0000)	-11.5028* (0.0000)	116.041* (0.00000)	143.2144* (0.00000)

Source: Author's Computation Using Eviews 10

Note: * ** and *** suggest the rejection level at the 5%, 10% and 1% level accordingly.

Table 3 present the results of the panel unit root test with LLC, IPS, ADF, Fisher and PP- fisher test. The results indicates that all series become stationary after first

difference, at 5% level of significance, therefore, the null hypothesis that there is unit root is rejected at first differences. With these the data is suitable for the econometrics estimation and analysis.

Table 4: Panel Co-integration Test Results (Poverty as a Dependent Variable)

	Statistics	P-value
Panel V	-1.204393	0.8867
Panel P	1.124252	0.8867
Panel PP	1.019771*	0.0067
Group ADF	1.663833	0.9519
Group P	-0.869024	0.1924
Group PP	-4.85135*	0.0000
Group ADF	-11.7663*	0.0000

Source: Author's Computation Using Eviews 10

Note: * ** and *** suggest the rejection level at the 5%, 10% and 1% level accordingly.

To examine whether the variables under investigation Table 4 is estimated to determine whether there is co-integration relationship among LNGDP, CC, RL and LNEX in SSA, through the newly established approach to panel co-integration developed by Pedroni (2004). The approach involves four panel statistics and three group panel statistics.

The results indicate that the null hypothesis of no co integration is rejected at 5% level of significance on panel

PP, Group PP and Group ADF test statistics. This indicates that the variables move together towards stable equilibrium stage. It also implies that there is long run relationship among financial sector liberalization economic growth and poverty reduction in SSA. However, having long run relationship does not mean causality, as such to determine the direction of the causality, we estimate and analyses causality in the table 4

Table 5: Panel Vector Error Correction Mechanism Results

	ΔLNEX_t	ΔLNGDP_t	ΔCC	ΔRL_t
EC_{t-1}	1.483692* (-2.62323)	0.122430* (-3.46582)	0.0206598* (-2.95300)	0.059365* (-1.99367)
ΔLNEX_{t-1}	0.147188 (0.64967)	-7027661 (-0.26426)	0.001401 (0.12120)	0.001025 (0.50103)
$\Delta \text{LNGDP}_{t-1}$	1.009466* (2.21335)	-0.059555 (-0.75445)	-8951112 (-0.26087)	2.599912 (0.43168)
ΔCC_{t-1}	-0.257390 (0.07723)	1.170008* (2.45892)	-0.229702 (-2.81355)	-----
ΔRL_{t-1}	0.844202 (0.26263)	6.766608* (2.65196)	-----	-0.087920 (-1.10743)
C	0.273772 (-0.24891)	-1.8670902 (-0.17813)	-7.566605 (-0.00166)	-9.233305 (-0.01166)

Source: Author's Computation Using Eviews 10

Note:*** ** and * indicate the significance at the 5%, 10%, and 1% accordingly. The P- Value is given in parentheses.

The finding of this study as shown in table 5 above suggest that the error correction term is statistically significant with a positive co-efficient on Trade liberalization model, indicates that past disequilibrium changes in the Trade Liberalization will be adjusted back to the steady and stable equilibrium in the current period. However, in the Trade liberalization model with ΔLNEX_t as the dependent variable the econometric result of the investigated coefficient of $\Delta \text{LNGDP}_{t-1}$ indicates a statistically significant positive value. This suggests that economic growth impacts significantly International trade. Additionally, the coefficients of ΔCC_{t-1} and ΔRL_{t-1} which are the proxies of Institutional quality are significantly positive implying that Institutional quality has impacts on economic growth

However, the coefficients of ΔCC_{t-1} and ΔRL_{t-1} which are the proxies of Institutional quality are not significant; suggesting that Institutional quality does not have direct impact on International trade it requires sound management of the policy. Thus, the seven Sub-Saharan African country's trade liberalization does not have a direct impact on Economic growth. The policy implication is that

trade liberalization required institutional quality that can mediate between trade policy and economic growth.

5. Conclusion and Recommendations

Many Countries in Sub-Saharan Africa have embarked on trade liberalization in order to faster economic growth. While studies on trade liberalizations and economic growth has received greater attention in recent time but none of these studies pay much attention to the importance role of institutional quality. Therefore, findings of this study suggest that institutional quality is important in stimulating the spillover effects of economic growth in Sub-Saharan African. The findings of this study contravene the findings of the works of Duru and Ezenwe (2020), Duru et al (2021). However, the findings of this study also suggest that institutional quality influence economic growth in Sub-Saharan Africa this also support the works of Sanusi (2010). The Policy Implication of this study is for Sub-Saharan Africa to improve in the area of establishing good institutions that can support the trade liberalization policy and ensure that the spillover effect of trade liberalization is growth enhancing capabilities.

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