TRADE LIBERALIZATION AND ECONOMIC GROWTH IN NIGERIA: JOHANSEN CO-INTEGRATION APPROACH

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Abstract

This study examined the relationship between trade liberalization and economic growth in Nigeria between 1981 and 2022, using Johansen co-integration and Wald tests. The findings showed that the variables employed were co-integrated, leading to the long-run relationship among the variables. The results revealed that the independent variables: net oil export (NOIEX), net non-oil export (NNOIEX), exchange rate (EXR) and foreign direct investment (FDI) have short-run impacts on the gross domestic product (GDP). It is therefore recommended that government should not relent in her responsibility to ensure that both oil and non-oil trades in Nigeria are more encouraged, formulating policies to support its efficiency and profitability to enhance sustainable economic growth in the country.

Keywords: Trade Liberalization, Net Oil Export, Net Non-Oil Export, Exchange Rate, Foreign Direct Investment, Johansen Co-Integration.

1. INTRODUCTION

Trade liberalization is a macroeconomic contrivance which plays an important role in the economy of any nation as it opens up the economy to foreign direct investment. It is very much needed in the less developed countries across the world, as it facilitates the advancements in the production and technological competitiveness of goods and services, leading to boost foreign investment among nations. Trade liberalization is required to make the suitable position of the less developed countries goods in the global market. It creates and provides greater autonomy to the businesses in decision making and to eliminate government interference and on the other hands, it increases the growth rates in a very short span period of time. Trade liberalization can lead to higher imports than exports, resulting in higher rate in developed countries and increment in the income of less developed economies which eventually helps to reduce the trade deficits of the economies (Kerala Service Commission, 2024). Acharya (2012) ascertained that trade liberalization is the removal or reduction of barriers in the flow of goods and services across the boundaries of different countries. This removal occurs in both tariff and non-tariff barriers where tariff barriers are indicated as duties and surcharges while non-

tariff barriers include licensing, rules, quotas and others. However, the major goal of trade liberalization is to create free trade across the nations of the world.

Trade liberalization is economically necessary as it achieves some objectives including, to increase the level of competition within the domestic market, to promote the foreign trade, to make advancement in technology and foreign capital, to develop a well-established global market of the country, to reduce the debt burden of the country, to advance the private sector and its expansion and to increase the efficiency of the market (Kerala Service Commission, 2024). The restrictive trade policies were embraced by most developing economies in their early drive for economic growth and development but most of them relaxed the policy and moved towards the liberalization of trade as the world moved towards globalization.

2. THEORETICAL AND EMPIRICAL REVIEW

Neo-classical growth model - Harrod-Domar model was modified by the Neo-classical model, which added a fresh idea called productivity growth. Solow (1956) and Swan (1956) made significant contributions to the model, as they independently developed very straightforward growth models. Solow was the first economist to realize a growth model that distinguished between or among different capital periods. Solow's model stated that new capital is more valuable than old capital because new capital is more productive than old capital. The model explains how higher saving and investment affect long run economic growth.

Endogenous growth theory - The growth model expanded Solow-Swan model. It added endogenous technical process and treats the rate of technological change as endogenous factor to explain long run growth rate of an economy.

Empirical review

Ita, Kwanashie, Ihuoma and Ac-Ogbonna (2023) examined the effect of trade liberalization on economic growth in Nigeria between 1981 – 2021, using autoregressive distributed lag (ARDL), error correction model and Toda-Yomamoto causality test. The findings showed that export value has a significant and positive relationship with the growth rate of gross domestic product in the long-run. Import value index has a negative and significant relationship with the growth rate of gross domestic product in the long run. Trade openness and exchange rate have a significant and negative relationship with growth rate of gross domestic product in the long run. However, there was a unidirectional positive causality existence between export value index and growth rate of gross domestic product.

Okoro (2022) examined the impact of trade liberalization on economic growth in Nigeria, using autoregressive distributed lag bound test for the long run relationship. The study found that a percent rise in total export trade brought about 0.84% increase in economic growth in Nigeria.

Ogundipe and Adenekan (2022) investigated the effect of trade liberalization on economic growth in Nigeria between 1981 and 2018, using co-integration technique. The finding showed that only foreign direct investment and labour had significant effect on economic growth in Nigeria in the short-run. Gross capital formation, trade and exchange rates had statistically

negligible effects on the economic growth, while all other variables were statistically significant in the long-run for predicting economic growth.

Muhammed, Oafor and Itodo (2022) examined the impact of trade liberalization on economic in Nigeria between 1970 and 2012, using ordinary least square (OLS) regression model. The findings showed that trade openness, real exchange rate tariff rate and foreign direct investment had positive significant impact on the economic growth at 1%. And that all the variables had positive relationship with economic growth in Nigeria within the period of the study.

Salami, Maku, Adelowoka, Oyewole, Toriola (2022) used the gauss markov regime switching model to investigate the effects of trade liberalization on economic growth in Nigeria based on data collected from the Central Bank of Nigeria's (CBN) statistical bulletin from 1985 to 2019. The findings revealed that trade liberalization was harmful to Nigerian growth and that the performance of trade policy during the Structural Adjustment Programme (SAP) period fluctuated dramatically from the gradual trade liberalization.

Yameogo and Omojolaibi (2021) explored the relationship among trade openness, economic growth and poverty level in forty (40) Sub-Saharan Africa countries from 1990 to 2017, using panel autoregressive distributed lag (PARDL) model, panel vector auto-regression (VAR) and the System of Generalized Method of Moments (SYS-GMM). The results revealed that trade openness, foreign direct investment and institutional quality significantly improved economic growth in the long run, while institutional quality reduced economic growth in the short run.

Duru, Bartholomew, Adikwu, and Njoku (2020) examined the association between trade liberalization and economic growth in Nigeria from 1981 to 2018, using autoregressive distributed lag bounds (ARDL) technique. The results showed that trade liberalization did not support economic growth in Nigeria. Moreover, the results showed the presence of unidirectional causality from real gross domestic product (RGDP) to trade liberalization in Nigeria.

Ajayi and Araoye (2019) examined the effect of trade openness on economic growth in Nigeria from 1970 to 2016, using co-integration test. The findings showed the existence of a long-run relationship among the variables. Trade openness and economic growth had a positive relationship but a negative relationship between economic growth and exchange rate in Nigeria within the period of study.

Onuora (2018) conducted research on trade liberalization and economic growth in Nigeria from 1990 – 2017, using OLS estimation technique. The findings showed openness (DOP), inflation rate (INF), foreign direct investment (FDI), balance of trade (BOT) and net export (NEXP) had positive significant impacts on GDP, while EXR and BOP had a negative impact on the economic growth in Nigeria.

Olowe and Ibraheem (2015) invested the effect of trade liberalization on economic growth during the Structural Adjustment Programme (SAP) period (starting from 1986) in Nigeria using trade openness as a proxy for trade liberalization, the estimated OLS regression model showed that trade openness had a negative effect on economic growth under the Structural

Adjustment Programme (SAP) period.

Manni and Ibne Afzal (2012) investigated the effect of trade liberalization of the economic performance of Bangladesh from 1980 to 2010. The estimated ordinary least square regression line showed that trade liberalization had a positive significant effect on GDP growth rate.

Nwafor, Adenikinju and Ogujiuba (2007) used a dynamic equilibrium econometric technique to estimate trade liberalization as a predictor in Nigeria. They found out that the effect of trade liberalization for different household type varies from one household type to the other. While a positive effect was found in the case of urban households, trade liberalization impacted negatively on rural households characterized by mainly agricultural production driven by land and labour.

Duru (2020) examined the relationship between trade liberalization and economic growth in Nigeria. The dependent variable used in GDP per capital growth rate and the independent variables were trade openness, gross fixed capital formation, inflation rate, and general government final consumption. He concluded from his findings that trade liberalization does not support economic growth in Nigeria and so call for its implementation in developing countries by international organizations in the late 1980s and early 1990s was not necessary.

Ojeyinka and Adegboye (2017) examined the impact of trade liberalization performance in the Nigerian economy between 1981 and 2014, using a Generalized Method of Moment (GMM) technique. The results revealed that trade openness exerted a positive and significant impact on the output of the agricultural export, while a significant negative relationship existed between trade openness and manufacturing output in Nigeria. The study further revealed that exchange rate had a positive but not significant impact on agricultural output while the exchange rate and inflation had a negative and significant impact on the manufacturing sector.

Nigeria over the years has opened her boarders for trading with high imports and exports of goods and services. Due to high level of trade (imports and exports) in Nigeria over the years and the sluggish records in the economic growth in Nigeria, it is necessary to examine the relationship between trade liberalization and the performance of the economy. Hence, this study focuses on the impact of trade liberalization on economic growth in Nigeria between 1981 and 2022.

3. MODEL SPECIFICATION

This study examines the impact of trade liberalization on economic growth in Nigeria from 1981 to 2022 and adopted an expos-facto research design. The independent variables used in the study are: Net Oil Export (NOIEX), Net Non-Oil Export (NNOIEX), Exchange Rate (EXR) and Foreign Direct Investment (FDI) while the dependent variable is Economic Growth proxy by GDP.

The model is aligned with the endogenous growth framework and is specified as follows:

GDP = f (NOIEX, NNOIEX, EXR, FDI) …………………... (1)

Where:

GDP = Growth rate of gross domestic product

NOIEX = Net oil export

NNOIEX = Net non-oil export proxy by net export of goods and services

EXR = Exchange rate

FDI = Foreign direct investment

μ_t = Stochastic error term

$GDP_t = \alpha_0 + \alpha_1 NOIEX_t + \alpha_2 NNOIEX_t + \alpha_3 EXR_t + \alpha_4 FDI_t + \mu_t$ ……………. (2)

Equation 2 above indicated the econometrics form of the model displayed in equation 1.

$\alpha_1 - \alpha_4$ = Elasticity of the independent variables

4. RESULTS AND DISCUSSION

Table 1: Lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2466.562	NA	7.64e+48	126.7468	126.9600	126.8233
1	-2277.848	319.3624	1.75e+45	118.3512	119.6308*	118.8103*
2	-2256.889	30.09509	2.30e+45	118.5584	120.9044	119.4001
3	-2212.938	51.83880*	1.04e+45*	117.5866*	120.9990	118.8109

Source: Authors' computation (2024)

Table 1 showed the lag order selection criteria. Base on the information realized, lag 3 is appropriate for selection where most of the criteria are accepted (LR, EPE and AIC).

Table 2: Unit root test result

Variables	Augmented Dickey Fuller (ADF)			Philip-Peron (PP)		
	Test Statistics	5% Critical Value	Order of Integration	Test Statistics	5% Critical Value	Order of Integration
GDP	-4.156358	-2.936942	I (1)	-4.086517	-2.936942	I (1)
NOIEX	-7.091219	-2.936942	I (1)	-7.158975	-2.936942	I (1)
NNOIEX	-7.196728	-2.938987	I (1)	-5.080930	-2.936942	I (1)
EXR	-3.080073	-2.936942	I (1)	-2.992210	-2.936942	I (1)
FDI	-6.273804	-2.936942	I(1)	-6.277818	-2.936942	I(1)

Source: Authors' computation (2024)

Table 2 conducted unit root tests, using the augmented Dickey-Fuller and Phillip-Peron methods. It is observed that both tests produced identical results for all variables. The autoregressive distributed lag bounds and Johansen co-integration techniques can be utilized

for the analysis, but the Johansen co-integration technique was employed to ascertain the presence of co-integration among the variables in this study.

Table 3: Johansen co-integration test

Hypothesised No of CE(s)	Trace				Maxi			
	Eigen Value	Trace Stat	0.05 C. V	P-value	Eigen value	Max-Eigen value	0.05 C. V	P-value
None*	0.606288	93.24088	69.81889	0.0002	0.606288	37.28547	33.87687	0.0188
At most 1*	0.521790	55.95541	47.85613	0.0072	0.521790	29.50825	27.58434	0.0280
At most 2	0.342230	26.44716	29.79707	0.1159	0.342230	16.75598	21.13162	0.1838
At most 3	0.179970	9.691187	15.49471	0.3053	0.179970	7.936582	14.26460	0.3852
At most 4	0.042917	1.754605	3.841466	0.1853	0.042917	1.754605	3.841466	0.1853

Source: Authors' computation (2024)

Trace and Maxi tests indicated 2 co-integrating eqn(s) at the 0.05 level

Table 3 showed Johansen co-integrating test which indicated that both Trace and Maxi tests have 2 co-integration equations at 0.05 level of significance at none and at most 1 equations. Based on the information obtained, the co-integrating results showed that the employed research variables are co-integrated. This implies that a long run positive relationship exists among the variables used in the study. The study therefore test for short run relationships of the research variables using Wald test chi-square analysis as presented below:

Table 4: Wald test

Test Stat	Value	Df	P-value
F-Stat	8.395741	(10, 27)	0.0000
Chi-square	83.95741	10	0.0000

Source: Authors' computation (2024)

Table 4 is the Wald test for determining the short-run relationship between the dependent variable and independent variables. Based on the information on the table, it is shown that independent variables (NOIEX, NNOIEX, EXR and FDI) have short-run relationship with the dependent variable (GDP) as the p-value of the Chi-square of 0.0000 is significant, at 1% level of significance. To test the reliability of the research variables employed, the study tested for heteroskedasticity.

Table 5: Heteroskedasticity test Breusch-Pagan-Godfrey

Ho: There is no heteroskedasticity in the model

H1: There is heteroskedasticity in the model

F-Stat	1.171493	Prob f(15, 23)	0.3566
Obs*R-squared	16.89137	Prob Chi-square (15)	0.3254

Source: Authors' computation (2024)

Table 5 revealed that the heteroskedasicity test has f-statistic value of 1.171493 and the probability value is more than 5% at 0.3566. Based on this information, the null hypothesis (H_0) of no heteroskedasticity is accepted and it can be realized that the model has no problem and is valid for recommendations.

5. CONCLUSION AND RECOMMENDATIONS

This study investigated the relationship between trade liberalization and economic growth in Nigeria from 1981 to 2020, using Johansen Co-integration Test and Vector Error Correction Mechanism. The findings showed that the variables employed were co-integrated, leading to the long-run relationship among the variables as aligned with Ajayi and Araoye (2019). The results revealed that the independent variables (NOIEX, NNOIEX, EXR, FDI) have short-run impacts on the dependent variable (GDP). It is therefore recommended that government should not relent in her responsibility to ensure that both oil and non-oil trades are more encouraged, formulating policies to support its efficiency and profitability.

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