International Trade and Economic Growth in Nigeria:

1986 - 2019

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ABSTRACT

The paper sought to test the impact of international trade on economic growth in Nigeria. The research adopted the causal research design. Time series data sourced from the Central Bank of Nigeria Statistical Bulletin from 1986 to 2019 were used to determine the impact of international trade on economic growth in Nigeria. Economic growth was proxied by Gross Domestic Product while international trade was proxied by trade openness, export, and exchange rate as a moderator. Trend analysis was employed in the analysis and the hypothesis was tested at 5% level of significance. To get a more robust estimate of the effects of the independent variables on the dependent variable, the log of the variables were taken. The unit root test result showed that the log of Gross Domestic Product (GDP), Trade Openness (TOP) and were stationary at level while the log of Exchange Rate (EXCHR) and Export (XP) were stationary at first difference. Consequently, we applied the ARDL model in the analysis. The results showed that Exchange rate and trade openness had negative and significant impact on economic growth while export had positive and significant impact on growth. Nigeria could gain more from international trade if the economy and the production structures becomes responsive and more adaptable to changes both internally and externally on the basis of international economic system. In ever changing and highly competitive global environment, Nigeria needs to continually re-examine, revise and re-evaluate sources of strengths, weaknesses, opportunities and threats (SWOT analysis) in order to develop appropriate policy strategies, that can lead to maximum national benefits from international trade.

Keywords:- *International Trade: Economic Growth: Nigeria*

I. INTRODUCTION

The classical economists, Adam Smith and David Ricardo believed that trade positively influenced economic growth. They argued that the higher accumulation of technical progress and capital would improve productivity and would lead to higher welfare gains as well as to higher growth (Antunes, 2012). There is no country which has grown without the useful tool of trade (Lawal & Ezeuchenne, 2017). International trade plays a major role in the economic growth of any nation. It was defined by Yakubu & Akanegbu (2015) as the exchange of capital, goods and services across the international borders or territories. It is concerned with the economic and financial relationship amongst nations. As a major factor of openness, international trade has made an increasingly significant contribution to economic growth (Sun & Heshmati, 2010).

According to Afolabi; Danladi & Azeez (2017), over the past few decades, the magnitude of external trade between nations of the world has increased significantly. In particular, Nigeria has experienced a sharp increase in the value and volume of trade with other countries of the world. Foreign trade statistics in 2014 by Economic Complexity Index (ECI) showed that Nigeria was the 119th most complex economy and the 41st largest export economy in the world. In 2013, Nigeria exported $94.8B and imported $53.3B, leading to favourable trade balance of $41.6B. In the same year, the per capita GDP of Nigeria was $5.6k and her GDP was $521B. Further analysis of the components of export and import indicates that the top exports of Nigeria are Refined Petroleum ($3.07B), Cocoa Beans ($561M), Crude Petroleum ($75.3B), Petroleum Gas ($10.3B), and Special Purpose Ships ($463M), while her top imports are Wheat ($1.42B), Rolled Tobacco ($1.34B), Refined Petroleum ($9.5B), Cars ($1.87B), and Special Purpose Ships ($1.01B). Expressed in percentage, the exports were led by Crude Petroleum which stands for 79.4% of the total exports of Nigeria, followed by Petroleum Gas, which accounts for 10.9% whereas the imports are led by Refined Petroleum which accounts for 17.9% of the total imports of Nigeria, followed by Cars, which contribute 3.51%.

Nigeria recorded a trade surplus of N197, 187.70 millions in September, 2015. Balance of Trade in Nigeria averaged N201, 370.76 million from 1981 until 2015, reaching an all-time high of N217, 7553.08 Millions in October of 2011 and a record low of N -592200.72 Millions in March, 2011. The Nigerian Bureau Statistics (NBS) reported this Balance of Trade and this tendency is expected over the long term due to the unrelenting calls for heightened trade liberalization to foster economic growth across the globe (Afolabi; Danladi & Azeez, 2017). Therefore, this paper seeks to examine the impact of international trade on economic growth in Nigeria. In other words, how activities in international trade enhance economic growth in Nigeria.

II. REVIEW OF RELATED LITERATURE

A number of studies have been undertaken by different researchers at different countries of the world on the relationship between international trade and economic growth. Gwaindepi, Muaara & Dhoro (2014) investigated if there exist a long run relationship between various trade and other macroeconomic variables for Zimbabwe for the period 1975 to 2005.

Lawal & Ezeuchenne (2017) studied the impact of international trade on economic growth. Variables used in the measurement of international trade included: Imports, exports, balance of trade and trade openness while real gross domestic product was used as a measure for economic growth using periodic data from the years 1985-2015. The econometric tests employed made use of the Unit Root Test to establish stationarity of the variables, the Johansen Co-integration Test was used to determine the long run relationship between the variables while the Vector Error Correction Model (VECM) was used to analyze the data so as to determine the speed of adjustment of the variables. The result showed that there is a long run relationship between international trade and economic growth, import and trade openness are both insignificant in the short run but significant in the long run while export and balance of trade are significant in both the short and long run. The granger causality test showed that economic growth is independent of imports, exports and balance of trade but economic growth is unidirectional with trade openness. The study recommended that government should increase its exploration of finished goods and reduce importation of finished goods to increase economic growth.

Afolabi; Danladi & Azeez (2017) examined the impact of international trade on economic growth in Nigeria. The study made use of time series secondary data obtained from Central Bank of Nigeria, National Bureau of Statistics and International Financial Statistics for a period between 1981 and 2014. Augmented Dickey-Fuller (ADF) test together with Phillip-Perron (PP) test of Unit Root Tests were employed to ascertain the stationarity properties of the variables. The Ordinary Least Square (OLS) technique was used to test for the significant relationship between the level of economic growth proxied by GDP as dependent variable and exchange rate, government expenditure, interest rate, foreign direct investment, import and export as independent variables. The result revealed that government expenditures, interest rate, import and export are all positively significant while exchange rate and foreign direct investment are negatively insignificant to the growth process of the Nigerian Economy. The econometric results suggest that Nigerian government should give more emphasis to specialization on agriculture so as to diversify her production and export base in order to enable the country benefit all the gains of trade including economic growth. The country's trade should not only be on primary and oil exports but also the promotion of non-primary exports and non-oil exports i.e. manufactured goods. Promotion of exports within the context of sub-regional and regional economic integration should be vigorously pursued to expand Nigerian international market and the importation policy of the government should be strictly adhered to in order to control dumping and to encourage the local investors.

Elais, Agu & Eze (2018) evaluated the impact of international trade on the Nigeria economic growth. Multiple regression analysis technique was employed in estimating the various components of foreign trade. The data used for the study was extracted from the 2012 edition of the CBN statistical bulletin, covering the period from 1980 – 2012. The results of the study

showed that there is a significant impact of Export trade on the Nigerian economic growth. The study also revealed that there is no significant impact of import trade on the Nigerian economic growth. The researchers among other things recommended that conscious efforts should be made by government to fine-tune the various macroeconomic variables in order to provide an enabling environment to stimulate foreign trade by engaging in more of export trade and in effect curtail on import trade which has a negative effect or strain the economy, the underground economic activities of bunkering, smuggling, child and drug trafficking, and other related illegal activities should he properly checked, it was also recommended that the government should encourage export diversification, e.g. non-oil sector exports should be encouraged and concentration on oil sector export should be minimized.

Czyzewski (2021) addressed issues connected with economic growth, how the theory on it has changed and also what its potential determinants are. In order to do so, the panel data was constructed for 129 countries with the time period of 1975-2015. In addition to this, the paper also accounts for the model uncertainty as well as reverse causality issues that may arise while dealing with such data. The methodology applied in the research consists of the Moral Benito (2016) framework combined with the Bayesian model averaging method (BMA). Out of the five variables, only one turned out to be fragile. The other four appeared to be robust with three of them at the most restrictive level. What is more, the paper also presents the potential reasoning behind obtained results and upholds the hypothesis that international trade has a positive impact on the economic growth.

Yakubu & Akunegbu (2015) examined the impact of international trade on economic growth in Nigeria for the period 1981 to 2012. Using degree of openness to proxy international trade, the ordinary least squares technique was employed to estimate the impact of international trade on Gross Domestic Product. The analysis was based on data extracted from World Bank data and Central Bank of Nigeria Statistical Bulletin. The result of the analysis shows that all the variables except interest rate were statistically significant. Therefore, the study recommends that policy makers should adopt policies on trade liberalization such as reduction of non-tariff barriers, reducing tariffs, reducing or eliminating quotas that will enable the economy to grow at spectacular rates. And thus this study supports the proposition that degree of openness has direct robust relationship with economic growth since the proxy variable is positive and statistically significant in the model.

III.   METHODOLOGY

The research adopted the causal research design. Time series data sourced from the Central Bank of Nigeria Statistical Bulletin from 1986 to 2019 were used to determine the impact of international trade on the Nigerian economy. The Nigerian economy was proxied by Gross Domestic Product while international trade was proxied by trade openness, export, and exchange rate as a moderator. Trend analysis was employed in the analysis and the hypothesis was tested at 5% level of significance. To get a more robust estimate of the effects of the independent variables on the dependent variable, the log of the variables were taken. The unit root test result showed that the log of Gross Domestic Product (GDP), Trade Openness (TOP) and were

stationary at level while the log of Exchange Rate (EXCHR) and Export (XP) were stationary at first difference. Consequently, we applied the ARDL model in the analysis. The ARDL model was presented as:

$$Y_t = Y_{0i} + \sum_{i=1}^{p} \delta_i Y_{t-i} + \sum_{i=0}^{q} \delta_i \beta'_t X_{t-i} + \mathcal{E}_{it}$$

(where Y'_t is a vector and the variables in $(X'_t)'$ are allowed to be purely $l(0)$ or $l(1)$ or cointegrated; β and δ are coefficients; Y is the constant; i = 1, …, k; p, q are optimal lag orders; $\mathcal{E}_{it}$ is a vector of the error terms – unobservable zero mean white noise vector process (serially uncorrelated or independent).

IV.   DATA ANALYSIS AND DISCUSSION

This section analyzed and discussed the generated statistical data in respect of the dependent and independent variables. It started with the statement of hypothesis in both null and alternate form as follows:

H_0: International trade has no positive and significant impact on economic growth.
H_1: International trade has positive and significant impact on the economic growth.

Auto-Regressive Lagged Result of the Impact of International Trade on the Nigerian Economy

Dependent Variable: LOGGDP
Method: ARDL
Date: 11/23/22   Time: 23:12
Sample (adjusted): 1988 2019
Included observations: 32 after adjustments
Maximum dependent lags: 2 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (2 lags, automatic): LOGEXCHR LOGTOP
LOGXP
Fixed regressors: C
Number of models evalualed: 54
Selected Model: ARDL(1, 1, 2, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGGDP(-1)	0.827921	0.129439	6.396207	0.0000
LOGEXCHR	-0.114051	0.052016	-2.192634	0.0392
LOGEXCHR(-1)	0.154658	0.053924	2.868085	0.0089
LOGTOP	-0.368848	0.116900	-3.155240	0.0046
LOGTOP(-1)	0.434512	0.154603	2.810509	0.0102
LOGTOP(-2)	-0.153696	0.107787	-1.425914	0.1679
LOGXP	0.395807	0.087372	4.530135	0.0002

LOGXP(-1)	-0.462358	0.136171	-3.395432	0.0026
LOGXP(-2)	0.185364	0.090666	2.044471	0.0531
C	0.165980	0.121467	1.366466	0.1856

R-squared	0.999401	Mean dependent var	4.069433
Adjusted R-squared	0.999157	S.D. dependent var	0.826816
S.E. of regression	0.024013	Akaike info criterion	-4.370149
Sum squared resid	0.012686	Schwarz criterion	-3.912107
Log likelihood	79.92239	Hannan-Quinn criter.	-4.218321
F-statistic	4081.220	Durbin-Watson stat	1.515456
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model
 Selection

The result indicated that GDP as the dependent variable while its past value, exchange rate and its lag, trade openness and its one-period lag and two-period lags including export and its lagged values of up to two as the independent variables.

From the result, a unit change in the past value of the dependent variable will automatically bring about 83% unit changes in the dependent variable. The p-value showed that this relationship is statistically significant. The relationship between Exchange Rate and GDP from this result showed that they are inversely related pointing that a unit increase in exchange rate in the country causes about 11% significant decrease in the economic growth. However, from this result, any one unit change in the one-period lag of exchange brings about 15% significant changes in the dependent variable. This time around, in the same directional movement unlike exchange rate itself.

Trade openness including its two-period lag showed a negative relationship with the dependent variable, while its one-period lag is positively related with Gross Domestic Product. From the result, a unit increase in trade openness causes about 37% significant decline in Gross Domestic Product while with respect to its two period lag, any one unit change in it brings the dependent variable to an inverse significant change of about 15%. This is not the case for the one-period lagged value of trade openness as it is positively related with economic growth, From the result, any unit change in the past value of trade openness causes about 43% same-directional significant change in economic growth. The implication of this might be that the nation does not benefit from current trade openness unless after a year.

Export and its two-period lag from the result indicated a positive relationship with the dependent variable while its one-period lag showed a negative relationship. On this note, any unit increase in export brings about 40% significant increase in Gross Domestic Product while a unit decrease in its past value causes about 46% significant increase in the dependent variable. This is not the case for the two-period lag, The result showed that a unit change in the two-period lag of export causes about 18% insignificant same-directional change in Gross Domestic Product.

V.   CONCLUSION

International trade has been observed to be a good tool of influence of the Nigerian economy. The relationship between Exchange Rate and GDP from the study showed that they are inversely related, pointing that a unit increase in exchange rate in the country causes about 11% significant decrease in the economic growth. For trade openness, a unit increase in trade openness causes about 37% significant decline in Gross Domestic Product, any one unit change in it brings the dependent variable to an inverse significant change of about 15%. Export indicated a positive relationship with the dependent variable. On this note, any unit increase in export brings about 40% significant increase in Gross Domestic Product.

Nigeria could gain more from international trade if the economy and the production structures becomes responsive and more adaptable to changes both internally and externally on the basis of international economic system. In ever changing and highly competitive global environment, Nigeria needs to continually re-examine, revise and re-evaluate sources of strengths, weaknesses, opportunities and threats (SWOT analysis) in order to develop appropriate policy strategies, that can lead to maximum national benefits from international trade.

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APPENDIX

Null Hypothesis: LOGGDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.894333	0.0054
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGGDP)
Method: Least Squares
Date: 11/23/22   Time: 23:05
Sample (adjusted): 1987 2019
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGDP(-1)	-0.028646	0.007356	-3.894333	0.0005
C	0.199091	0.029633	6.718437	0.0000

R-squared	0.328508	Mean dependent var	0.086446
Adjusted R-squared	0.306847	S.D. dependent var	0.044432
S.E. of regression	0.036992	Akaike info criterion	-3.697528
Sum squared resid	0.042421	Schwarz criterion	-3.606830
Log likelihood	63.00921	Hannan-Quinn criter.	-3.667011
F-statistic	15.16583	Durbin-Watson stat	1.377455
Prob(F-statistic)	0.000490		

Null Hypothesis: D(LOGEXCHR) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.711561	0.0000
Test critical values: 1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGEXCHR,2)
Method: Least Squares
Date: 11/23/22   Time: 23:08
Sample (adjusted): 1988 2019
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGEXCHR(-1))	-0.988244	0.173025	-5.711561	0.0000
C	0.058043	0.024725	2.347557	0.0257

R-squared	0.520935	Mean dependent var	-0.009292
Adjusted R-squared	0.504966	S.D. dependent var	0.174737
S.E. of regression	0.122943	Akaike info criterion	-1.293738
Sum squared resid	0.453446	Schwarz criterion	-1.202129
Log likelihood	22.69981	Hannan-Quinn criter.	-1.263372
F-statistic	32.62193	Durbin-Watson stat	1.983851
Prob(F-statistic)	0.000003		

Null Hypothesis: LOGTOP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.895555	0.0004
Test critical values: 1% level	-3.646342	
5% level	-2.954021	
10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGTOP)
Method: Least Squares
Date: 11/23/22   Time: 23:09
Sample (adjusted): 1987 2019
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGTOP(-1)	-0.527224	0.107694	-4.895555	0.0000
C	1.334299	0.269150	4.957455	0.0000

R-squared	0.436020	Mean dependent var	0.019765	
Adjusted R-squared	0.417827	S.D. dependent var	0.139017	
S.E. of regression	0.106070	Akaike info criterion	-1.590742	
Sum squared resid	0.348777	Schwarz criterion	-1.500045	
Log likelihood	28.24724	Hannan-Quinn criter.	-1.560225	
F-statistic	23.96646	Durbin-Watson stat	2.052557	
Prob(F-statistic)	0.000029			

Null Hypothesis: LOGXP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.922642	0.0535
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGXP)
Method: Least Squares
Date: 11/23/22   Time: 23:10
Sample (adjusted): 1987 2019
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGXP(-1)	-0.088001	0.030110	-2.922642	0.0064
C	0.649435	0.188855	3.438803	0.0017

R-squared	0.216020	Mean dependent var	0.103666
Adjusted R-squared	0.190731	S.D. dependent var	0.180056
S.E. of regression	0.161977	Akaike info criterion	-0.744035
Sum squared resid	0.813332	Schwarz criterion	-0.653337
Log likelihood	14.27657	Hannan-Quinn criter.	-0.713518
F-statistic	8.541834	Durbin-Watson stat	2.106421
Prob(F-statistic)	0.006428		