

International Trade and Economic Growth in Nigeria

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Abstract

The macroeconomic policy distortions emanated from trade has turned Nigeria into an import dependent economy. This is one of the motives why international trade has not been able to translate into economic growth in Nigeria. Therefore, the study set out to examine the impact of international trade on economic growth in Nigeria. The sources of data for this study were secondary in nature spanning from 1986 to 2022 and it was obtained from Central Bank of Nigeria statistical bulletins. The study employed ARDL Model as the estimation technique to capture the stated objective. The ARDL bound test revealed that there is presence of long-run relationship among the variables. The ARDL results in the long run showed that there is significant negative relationship between export, exchange rate, inflation and GDP while import and FDI have significant positive relationship with GDP. The study also exhibited that current account balance has insignificant negative impact on economic growth. In line with these findings, the study recommended that the government of Nigeria has to take necessary measures to upgrade the infrastructures, increase productivity and competitiveness of enterprise in the export sector. More so, government should also encourage export diversification and minimise concentration on oil export to create healthy competition in the global market

Keywords: International trade, Economic growth, FDI and ARDL model

Introduction

In a global economy, no nation is autarky (Self-sufficient). Each nation is involved in trade at different levels to sell what it produces, acquire what it lacks. Trade is basically part of economic activities everywhere. It creates an intricate network of economic interaction that encompasses the globe. International trade has played a pivotal role in economic development of the entire world. International trade is one of the areas of interest in the development and macroeconomic analysis.

Even, this dispensation of globalization has more importantly, showcased the significance of international trade as an engine of growth (Elia et al, 2018). International trade is an exchange goods or services across national borders. It allows countries to expand their market, access goods and services that otherwise may not have been available domestically and also contribute to the improved standard of living in the world through the provision of multiple choices goods and service in the market.

Trade is an integral part of the economic activity and history; this makes the importance of international trade to be early recognized by political economists such as Adam Smith, and David Ricardo. Most of the trade theories in the economic literature focus on sources of comparative advantage put forward by David Ricardo. The theory posited that all nations can gain from trade if each specializes in producing what they are relatively more efficient at producing based on their strength. The empirical evidence also shows that comparative advantage is indeed relevant but it is not only forcing driving incentive to specialization and trade.

Over the last two decades, trade has grown remarkably, completely transforming the global economy. Since 1990s, trade has increased income by 24 percent globally. International trade has lifted more than one billion people above poverty across the globe (World Bank 2022). In view of the foregoing, it is evident from the literature that there is a strong correlation between trade and economic growth. It is observed that countries with higher rate of GDP tend to have higher growth rate in trade as a share of output. Many previous studies such as Okoye and Umeora (2020), Omar and Ozean (2022) and Muhammed Isah and Kumo (2023) have shown that trade is fundamentally one of the impetus forces driving natural income and macroeconomic productivity over a long period of time.

Before political independence in October 1960, Nigeria has been an active player in the field of foreign trade, initially with predominantly Primary agricultural products such as cocoa, palm oil, groundnut, etc. More importantly, Nigeria has also been one of the largest producers of crude oil which makes Nigeria as a vital actor in foreign trade (OPEC 2011)

One of the reasons why the benefits of foreign trade have not translated into economic growth in Nigeria is the macroeconomic policy distortions emanated from the trade which turned the countries into an import dependent economy.

2.0 Literature Review

Hassan (2007) employed Vector Auto-Regression (VAR), Impulse Response Function (IFR) and Grangercausality test to determine the long-term relationship between exports and domestic economic growth in Saudi Arabia from 1970 to 2005. The results of the study showed that the export sector had a significant effect on economic growth and a positive influence on other economic activities in the long run. Omoke and Ugwuanyi (2010) also used Granger causality and cointegration tests to investigate the relationship between export, domestic demand and economic growth in Nigeria. The results from Trace and Maximum Eigen Value test conducted showed that the variables do not have long-run relationship, but the Pair-wise Granger Causality test showed that economic growth Granger causes both export and domestic demand, while a bidirectional causality exists between export and domestic demand. Mustafa (2011) used VAR and VECM to analyze the relationship between foreign trade and economic growth in Turkey using quarterly data of GDP, export and import for the period of 1987 and 2007. He found that, in the short run, GDP growth did not significantly depend on the export growth.

Rahmaddi and Ichihashi (2011) also employed VAR and VECM framework to investigate the relationship between exports and economic growth in Indonesia during the period 1971 and 2008. The study found that exports and economic growth exhibit bi-directional causal structure. Sarbapriya Ray (2011) examined the relationship between foreign trade and economic growth in India, using the annual data over the period between 1972 and 2011. The cointegration and Granger causality tests utilized in this study confirmed that economic growth and foreign trade are cointegrated which indicates the existence of a long-run equilibrium relationship between the two variables. The study also showed the presence of bi-directional causality which runs from economic growth to foreign trade with feedback. Safdari, Mehrizi and Dehqan-Niri (2012) employed Vector Autoregressive model (VAR) to investigate the long-run relationship between foreign trade and economic growth in Iran between 1975 and 2008. The results of the study showed that total population, trade volume, gross capital formation and tariffs have positive effect on economic growth. Fouzi, Rossazara and Kahairil (2021) examined the short and long run causal relationship between trade and economic growth in Lybia over a period of 1990 and 2017. The study employed Johansen cointegration test and Vector error correction (VECM) to capture the stated objective of the study. The result of the study found that there is a long-run relationship between foreign trade and economic growth in Lybia. The finding from the study also revealed that there is short run Causality running from exports and imports towards growth.

Engin and Konuk (2022) examined the relationship between economic growth and foreign trade in Turkey which spans from 1980 to 2019. The study also made use of Johansen Cointegration test and Granger Causality test to estimate the model of the study. The findings from the study showed that there is long-run

relationship between foreign trade and economic growth. The study also exhibited that there is causal relationship between import, export and economic growth in Turkey. Elias et al (2018) investigated the impact of international trade on economic growth between the period of 1980 and 2012. The study utilizes the multiple regression analysis the tool to estimate the various components of foreign trade. The results of the study revealed that there is a significant impact of export trade on economic growth in Nigeria.

Matias and Almas (2020) examined trade and economic growth theories in SADC. The study empirically tests the hypothesis that food can act as engine of growth. The study employed Panel data to estimate the model of the study. The results of the study showed that export expansion stimulate growth. The study also exhibited that more trade openness jeopardize growth. Wajdi and Mohammed (2021) examined the Impact of trade openness on the economic growth of the Countries bordering the Mediterranean using a Panel data for eight countries between the periods of 1975 to 2016. The result of the study shows thatt trade openness favoured economic growth. The findings from study also revealed that financial sector, human capital and investment rate support growth in Mediterranean. The causal analysis equally exhibited uni-directional causality ranging from economic growth to trade openness.

Ayodele and Iyola (2014) examined the nexus between foreign trade and economic growth in Nigeria using quarterly time series data spanning from 1981 (Q1) to 2014 (Q4). The study employed a vector autoregressive model to account for the feedback. The results revealed that there is a stable, long-run relationship between foreign trade and economic growth. The variance decomposition results showed that predominant sources of Nigeria economic growth variation are due largely to own stocks and foreign trade innovation. Yakubu and Akanegbu (2015) examined the impact of international trade on economic growth for the period of 1981 to 2012. The study employed ordinary Least Square (OLS) to estimate the impact of international on gross domestic (GDP). The result of the study showed all variable except interest rate were statistically significant. The study also revealed that trade openness has direct robust relationship with economic growth in Nigeria.

Okoye and Umeora (2020) evaluated the effect of international trade on growth of Nigeria using annual data of the period of 1981 to 2018. The study also made use of Cointegration analysis and error correction model to estimate the short and the long-run relationship between international trade and economic growth in Nigeria. The findings from the study showed that export and exchange rate has positive impact on economic growth while import has negative and statistically insignificant relationship with economic growth in Nigeria.

Omar and Ozean (2022) investigated the effect of international trade on economic growth in Nigeria. The study employed ARDL estimates to estimate the model of the study. The result showed that FDI and export had positive effect on economic growth while import and inflation had negative relationship with economic growth.

Owolabi, Odediran and Inuk (2015) investigated the impact of international trade in the growth of Nigeria's economy using data spanning from 1971 to 2012. The study employed Johansen Cointegration test and Granger Causality as economic tool for the study. The result exhibited that there is long-run relationship between international trade and economic growth. The granger causality test revealed that the uni-direction relationship between GDP and import.

Shido-Ikwu, Dankumo, Pius and Fazing (2023) used ARDL model to investigate the impact of international trade on economic growth in Nigeria using annual data spanning from 1981 to 2019. The ARDL bound test established presence of long run equilibrating link among all the variables. Moreover, the ARDL model results of the short-run and long-run estimations indicate that import trade and foreign direct investment and the exchange rate have a negative and insignificant impact on economic growth in Nigeria; whilst export trade established a direct and significant impact on Nigeria's economic growth over the study period. The study revealed that international trade had an insignificant impact on Nigeria's economic growth during the study period under review.

Muhammad, Isah and kumo (2023) also employed ARDL model to examine the impact of international trade on economic growth in Nigeria using quarterly data spanning from 2000Q1- 2020Q4. The findings of the paper reveal that exports demand has significant and positive short run and long run relationship with economic growth, while imports demand and exchange rate volatility have short run and long run negative relationships with economic growth in Nigeria during the study period.

3.0: METHODOLOGY

3.1 Theoretical Framework

Eli Hecksher and Bertil Olin (1936) are two Swedish economist that postulates a theory that addressed two issues that the Ricardian theory could not explain; what factors determine the comparative advantaged and what effect does foreign trade have on the factors incomes in the trading nations. The Hecksher Olin theory focuses on the differences in relative factors endowments and factors prices between nations as the most determinants of trade (On the assumption of equal or similar technology and tastes). Hecksher Ohlin maintained that the sources of the factors endowments determine a nation's comparative advantage. This arrangement is the basis of the theory to be referred to as factor endowment theory. The theory analyzed the differences in factors endowment on international specialization.

The model was based on two main prepositions; firstly, a country with specialization in the production and export of a commodity whose production requires intensive use of abundant resources. This implies that goods differ in factor requirement. Secondly, countries differ in factor endowment. Some countries have mush capital per worker and some have less. Countries could be ranked by factor abundance. The Hecksher-Ohlin model identified difference in pre-trade product prices between nations as the immediate basis for trade. The prices depend on production possibility curve (supply side) and then taste and preferences (demand side) in the trading nations. Production possibility curve depends on technology and resources endowment. According to the theory, a nation should produce and export a product for which the large amount of the relative abundance resources is used. Such country should import the commodity in which a great deal of its relative scarce and expensive factors is used. Where a resource is abundant, its cost is less than the cost in country where it is relatively scarce. This scenario facilitates comparative advantage. The effect of factor endowment on comparative advantage is seen as follows; differences in relative resource endowment leading to differences in relative resource prices and later to differences relatives' resource prices. The model suggests that the less develop countries that are labour abundant should specialize in the production of primary product especially agricultural product because the labour requirement of agricultural is high except in the mechanized form of farming. On the other hand, the less developed countries should import capital-intensive product mostly the manufactured goods from developed countries that are capital intensive.

The model assumed two countries, two commodities and two factors. There is perfect competition in both factor and product market. It assumed that factor inputs; labour and capital in the two countries are homogeneous. Production function also exhibits constant return to scale. Production possibility curve is concave to the origin. Due to the proposition upon which the theory is based, the Hecksher Ohlin suffers some criticisms. Factors inputs are not identical in quality and cannot be measured in homogeneous units. Furthermore, factor endowment differs in quality and variety. Perfect competition does not exist in real world. Products are rather differentiated. Relative factor prices reflect differences in relative factors endowment. Supply therefore outweighs demand in the determination of factor prices. Conclusively, from the Hecksher Ohlin theory, trade increase total world output. All countries gain from trade. Trade enables countries to secure capital and consumption of goods from other parts of the world. In this way, trade stimulates growth or serves as engine of growth.

3.2 Model Specification

Autoregressive Distributed Lag (ARDL) model was used to examine the impact of international trade on economic growth. The study adopted the work of Shido-Ikwu, Dankumo, Pius and Fazing (2023) with modifications. Thus, the basic model for Shido-Ikwu, Dankumo, Pius and Fazing (2023) is given below;

EXR=Exchange Rate, CAB= Current Account Balance, INF= Inflation and μ_t = Error Term.

4.0 RESULTS AND DISCUSSION

4.1: Descriptive Analysis

Table 4.1: Descriptive Statistics

	CAB	EXP	EXCH	FDI	IMP	INF	RGDP
	(\' Billion)	(₦' Million)	(%)	(\$' Billion)	(₦' Million)	(%)	(\' Billion)
Mean	23,910.1	7,921,081.	146.6	2,985,887.	6,607,235.	12.8	44,276.5
Maximum	53,000.3	27,251,572	425.9	8,841,062.	27,115,109	57.0	74,639.4
Minimum	1429.5	109,886.1	8.0	-186792.0	45,717.90	5.0	21462.7
Std. Dev.	17231.2	7,308,984.	116.5	2627407.	7,425,864.	9.3	20029.2
Skewness	0.0345	0.6985	0.8374	0.8742	1.2341	3.5937	0.2016
Kurtosis	1.4374	2.6542	2.9323	2.5958	3.6521	16.8571	1.3999
Observations	33	33	33	33	33	33	33

Source: Author's Compilation (2023)

The study made use of seven (8) variables ranging from 1990 to 2022 indicating 33 years' time lag as the mean values range from Inflation rate (INF) 12.8 percent being the lowest to Foreign direct investment (FDI) \$2.985bn with the highest average value. Furthermore, the study's variables were all centered around their respective mean values, as indicated by the standard deviation, which measures a variable's variability away from its mean. Nevertheless, from the dataset, it was obvious that Foreign direct investment (FDI) has the highest maximum value of \$8,841bn while the Inflation rate (INF) has the lowest minimum value of 5.0 percent. The skewness from the table below indicates that Current Account Balance (CAB), Export (EXP), Exchange rate (EXCH) and Real Gross Domestic Product (RGDP) with 0.0345, 0.6985, 0.8374, 0.8742 and 0.2016 were positive but slightly symmetrical indicative of the fact that their respective skewness values are slightly greater than zero whereas, Import (IMP) and Inflation rate(INF) were positively skewed implying that their respective skewness values were considerably greater than zero. Moreso, kurtosis measures the extent to which a given distribution is peaked or flat i.e. the peaked or flatness of the distribution, usually taken relative to a normal distribution. If the kurtosis is above three, then the distribution is peaked or leptokurtic relative to the normal and if the kurtosis is less than three, the distribution is flat or platykurtic relative to normal distribution. From the table below, it is observed that Inflation (INF) and Import (IMP) are above three therefore this suggests that these variables is leptokurtic, the implication is that it has higher value than it sample mean whereas Current Account Balance (CAB), Export (EXP), Exchange rate (EXCH), Foreign Direct Investment (FDI) and Real Gross Domestic Product (RGDP) are platykurtic. The implication is that they have less value than their respective sample mean.

4.2: Correlation Matrix

Table 2: Correlation Matrix

-							
	RGDP	CAB	EX	EXCH	FDI	IMP	INF
RGDP	1.000000						
CAB	0.810977	1.000000					
EX	0.921687	0.809061	1.000000				
EXCH	0.890191	0.666778	0.874814	1.000000			
FDI	0.403544	0.705736	0.369189	0.132975	1.000000		
IMP	0.897311	0.649701	0.924076	0.933087	0.157457	1.000000	
INF	-0.224237	-0.246973	-0.171951	-0.177201	-0.206232	-0.102278	1.000000

Source: Author's Compilation (2023)

From the table below the correlation matrix indicates the existence of a strong and positive relationship between Real Gross Domestic Product (RGDP) and Current Account Balance (CAB) with a correlation coefficient of 0.810977. This is also applicable to Export (EXP), Exchange rate (EXCH) and Import (IMP). It is vital to note that these relationships as stated above are highly significant. On the other hand, Inflation Rate (INF) has a low negative correlation with real Gross Domestic Product (RGDP). Nevertheless, the correlation matrix inferred the absence of multicollinearity amongst the variables used in the study indicative of the fact that Current Account Balance (CAB), Export (EXP), Exchange rate (EXCH), Foreign Direct Investment, Import (IMP) and Inflation Rate (INF) have negative correlation while others are positively correlated.

4.3: Unit Root Test

Table 3: Stationarity Test

Augmented	Augmented Dickey-Fuller Test					
Variable	Levels I(0)	Prob. Value	First Difference I(1)	Prob. Value	Decision	
RGDP	0.680642	0.8373	-2.890614*	0.0479	Stationary at first difference	
EXP	-1.877253	0.3383	-5.127068**	0.0002	Stationary at first difference	
EXCH	-1.888733	0.3331	-5.247345**	0.0002	Stationary at first difference	
FDI	-1.921747	0.3186	-6.570149**	0.0000	Stationary at first difference	
IMP	-2.417237	0.1452	-7.669464**	0.0000	Stationary at first difference	
CAB	-3.059193*	0.0420	-3.412961*	0.0194	Stationary at levels	
INF	-3.791720**	0.0071	-8.254123**	0.0000	Stationary at levels	

N.B: ** p<0.05, * p<0.1

Source: Author's Compilation (2023)

The stationarity test (i.e., Augmented Dickey-Fuller) results as indicated in the table above revealed that RGDP, EXCH, EXP, IMP, and FDI are Stationary at first difference. Whereas variables like CAB and INF used in the study were stationary at levels which indicate that the study has a mixed order of integration. This result therefore validates the choice for the use of Autoregressive Distributed Lag (ARDL) Model for further analysis of this study.

4.4: ARDL Bound Test

Table 4.4: ARDL Bound Test

F -statistics	6.496077	
K (dof)	7	
Significance	I(0)	I(1)
10%	2.45	3.52

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5%	2.86	4.01			
2.5%	3.25	4.49			
1%	3.79	5.06			

Source: Author's Compilation (2023)

The bounds test reveals that f-statistics value of 6.496077 is greater than critical value bounds test for the lower and upper bound I(1) at 5% level of significance, thus, showing us that there is co-integration i.e a long-run equilibrium relationship does exist between dependent and independent variables which denote that in our model we interpret both the short-run and long-run estimation of ARDL

4.5: Short Run ARDL Model Result

Table 4.5: Short Run ARDL Model Result

Variable	Coefficient	Std. Error	t-statistics	Prob. Value
D(IMP)	0.048861	0.027447	1.780221	0.1129
D(INF)	0.032869	0.015838	2.075288	0.0716
D(FDI)	0.013031	0.009728	1.339484	0.2172
D(CAB)	0.225478	0.010760	2.095541	0.0694
D(EXP)	-0.140341	0.046117	-3.043165	0.0383
D(EXCH)	-0.250724	0.070196	-3.571768	0.0233
ECT(-1)	-0.414355	0.059363	-6.980013	0.0001

Source: Author's Compilation (2023)

Results from table 4.5 showed a positive insignificant impact of the IMP on RGDP in the short run. Moreover, this is also applicable to INF, FDI and CAB implying that a unit increase in Inflation Rate, Foreign Direct Investment and Current Account Balance will lead in 0.032869, 0.013031 and 0.225478 increase in Real Gross Domestic Product respectively. However, EXP and EXCH exert a significant negative impact on Real Gross Domestic Product in the short run. More so, the Adjustment term of (-0.41435) is statistically significant at the 5 percent level suggesting that the previous year's errors are corrected for within the current year at a convergence speed of 41.4 percent.

4.6 Long ARDL Estimation Results

Table 6: Long Run ARDL Model Result

Variable	Coefficient	Std. Error	t-statistics	Prob. Value
IMP	0.324914	0.047777	6.800702	0.0001
INF	-0.152454	0.074764	-2.039129	0.0274
FDI	0.177939	0.066112	2.691473	0.0758
CAB	-0.128271	0.096323	-1.331674	0.2197
EXP	-0.101367	0.032407	-3.127952	0.0353
EXCH	-0.163573	0.021081	-7.759287	0.0015

Source: Author's Compilation (2023)

The long run estimation results indicate that IMP, FDI exert a positive impact on RGDP. This implies that a unit increase in IMP and FDI will lead to 0.3249 and 0.177939 increase in RGDP. Furthermore, EXCH, INF, CAB and EXP exert negative impact on RGDP in the long run. It is important to note that all the variables excluding CAB impacts RGDP significantly.

4.7: Diagnostic Test

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Table 7: Heteroskedasticity Test

F-statistic	0.898158	Prob. F(20,8)	0.6044
Obs*R-squared	20.06426	Prob. Chi-Square(20)	0.4539
Scaled explained SS	1.420611	Prob. Chi-Square(20)	1.0000

Source: Author's Compilation (2024)

With respect to the post estimate, Breusch-Pegan-Godfrey data depict that we accept the null hypothesis since the Prob. Chi-square (4) value of 0.6163 is greater (>) than 5%.

Table 8: Ramsey Reset Test

	Value	Df	Probability
t-statistic	0.350902	5	0.7400
F-statistic	0.123132	(1, 5)	0.7400

Source: Author's Compilation (2024)

Moreover, Since Ramsey Reset probability of F-statistics (0.7400) is higher than 5% level of significance, we accept the null hypothesis of valid regression model, i.e. the parameter estimates are stable over time **Table 9: Normality Test**



Source: Author's Compilation (2024)

Since the probability value of 0.494557 is greater than 0.05 level of significance, the study accepts the null hypothesis and therefore concludes that the data used in this research analysis follow a normal distribution. i.e. the data did not deviate from a normal distribution.

Discussion of the Findings

The results of this study showed that ADF unit root test revealed that RGDP, EXCH, EXP, IMP, and FDI are Stationary at first difference. Whereas variables like CAB and INF used in the study were stationary at levels. The ARDL bound test also showed that there is existence of co- movement among the variables involved in the study which indicates long run equilibrating link among all the variables. The ARDL model confirmed significant negative relationship between export and GDP both in the short run and long run which is not consonance with recent works of Okoye and Umeora (2020), Omar and Ozean (2022) & Muhammad, Isah and kumo (2023). The study also revealed that there is significant positive relationship between import and GDP in the long run which is also at variance with the recent works of Shido-Ikwu, Dankumo, Pius and Fazing (2023) & Muhammad, Isah and kumo (2023). These results may attribute to COVID 19 pandemic era and its post periods which were not included by other studies under review. The finding from the study also showed that FDI exerts positive impact on economic growth in Nigeria.

5.0 CONCLUSION AND RECOMMENDATIONS

The study examined the relationship between international trade and economic growth in Nigeria using the annual data spanning from 1986 to 2022. The ARDL bound test revealed that there is presence of long-run relationship among the variables. The ARDL results in the long run showed that there is significant negative relationship between export, exchange rate, inflation and GDP while import and FDI have significant negative relationship with GDP. The study also exhibited that current account balance has insignificant negative impact on economic growth. In line with these findings, the study recommended that the government of Nigeria has to take necessary measures to upgrade the infrastructures, increase productivity and competitiveness of enterprise in the export sector. More so, government should also encourage export diversification and minimise concentration on oil export to create healthy competition in the global market. In addition, government should not totally subject exchange rate into invisible hands, there should be little government intervention most especially during the high exchange rate volatility.

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