

Effect of Foreign Trade: An Econometric Analysis on Poverty Level in Nigeria

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Abstract: *This study empirically explored the effect of foreign trade on poverty level in Nigeria from 1985 to 2022. To achieve this goal, total export and total import were selected as foreign trade indicators, with foreign direct investment and official development assistance as external resource flow support variables while poverty index is utilised as measure of poverty level in Nigeria. Yearly series data were sourced mainly from Central Bank of Nigeria (CBN) Statistical Bulletin and World Development Indicators (WDI), and the Autoregressive Distributive Lag (ARDL) analytical procedure were applied for estimation. It is thus established that total export and foreign direct investment had negative and substantial effects on poverty index in Nigeria, total import had positive and substantial effects on poverty index in Nigeria and official development assistance inversely but insignificantly influenced poverty index in the country. Predicated on these findings, it is concluded that the adopted foreign trade indicators are unavoidably vital for reducing poverty level in Nigeria. Accordingly, among others, the study recommended that Nigerian government should focus on diversifying its export base beyond crude oil by developing the non-oil sectors, encourage foreign direct investments and more development assistance inflows to further strengthen poverty reduction actions in the country.*

Keywords: *Foreign Trade Indicators, Foreign Direct Investment, Official Development Assistance, Poverty Index, Autoregressive Distributive Lag, Nigeria*

INTRODUCTION

Every country, whether considered developing, undeveloped, or developed, has its own unique set of economic issues. In economies that are still in the early stages of development, poverty is a major problem. There are two main ways to look at poverty: one is as ‘money-lessness’, which means that people do not have enough money or other resources to take care of basic needs of life like ‘food, shelter, clothing, and medical care’; the other is as ‘powerlessness’, meaning that people do not have enough control over their lives and do not have enough opportunities to make their own decisions, but governed by decisions made on their behalf by forces and persons in positions as leaders (Umeh, Nwali & Obi, 2022). Reducing or eliminating poverty is the first Sustainable Development Goal (SDG). This highlights the seriousness of the worldwide problem and how it affects our understanding of progress. Researchers in economics have long been curious in the causes of global wealth and growth gaps and how it can be tamed. Among these elements is trade. Although international commerce may typically stimulate growth, it does not guarantee that trading partners get equitable share of the advantages (Obadan & Okojie, 2012).

The importation as well as exportation of goods and services, in particular, has grown in importance and prominence as a form of international business in today's uncertain global

economy. By trading goods and services across national boundaries, nations may work towards and maintain economic independence. Additionally, it facilitates the monetisation of a nation's precious metals, stones, and hydrocarbon deposits. As a result, the government is able to build essential infrastructure with the money it has earned, which raises living standards for everyone and helps the economy thrive and reduce poverty (Owolabi-Merus, Inuk & Odediran, 2015). The possibility for local companies to increase their market reach on a worldwide scale is an additional positive residual impact of foreign trade on the economy of emerging nations, particularly in Africa. The result is a rise in profit turnover and possible enlargement of the market, which helps local businesses thrive and create jobs for the growing population (Owolabi-Merus, Inuk & Odediran, 2015).

One cannot exaggerate the importance of international commerce to economic growth. This is because experts in classical and neoclassical economics agree that trading with rest of the world is crucial for any industrialised country's economy. Over the last three centuries, the world's economies have become much more interdependent due to globalisation. The development of a modern global economy is highly dependent on international trade. One way trade across national boundaries may affect an economy is by causing fundamental changes. The allocation of resources to nations with a comparative advantage in manufacturing is one way in which international commerce may increase production efficiency and consequently lead to decrease in poverty and increase in economic development, Jelilov, Çelik, and Abdallah (2020).

International exchange of goods and services is crucial to Nigeria's economic development because of the country's oil and agricultural industries, which provide a large amount of income. Before the advent of crude petroleum, substantial amount of Nigeria's revenue was derived from exporting primary agricultural commodities, including groundnuts, cocoa, palm oil, and rubber. Nevertheless, the discovery of crude oil led to neglect of Nigeria's primary export sector-agriculture. The technologically sophisticated nations like the US, UK, and Germany traded a lot of goods to Nigeria as it lacks the capacity to produce because of its undeveloped condition. Vehicles, tools, consumer items, intermediate inputs, and machines are all part of this category. Acquiring these goods via import helps boost technological efficiency and meets the productive needs of both local businesses and the people. This is separate from efforts to reduce poverty and create jobs (Ezindu, Onwuka, Okoli & Udeze, 2020).

Over the years, successive Nigerian governments have worked towards a goal of substantial economic expansion and growth. They were able to do this by enhancing important macroeconomic goals via the implementation of crucial policies regarding trade ties. Foreign commerce has the ability to boost the economy, create jobs, and reduce poverty overall, but it has had the opposite effect in certain areas. Several facets of Nigeria's economic structure contribute to the negative effects of international commerce on the poverty rate. For example, in industries like agriculture, construction, and manufacturing, Nigeria heavily depends on imports for consumer products, capital goods, and intermediate inputs. This economy is highly dependent on imports, making it vulnerable to supply chain disruptions, changes in currency rates, and price shocks from outside sources. Increased reliance on imports may have negative impact on local

production, employment possibilities, and revenue creation, especially in industries where Nigeria has comparative advantage but faces stiff competition from low-cost foreign competitors.

In the last decade, however, trade links with other nations have continued to expand overall exports, FDI, and government development aid. An estimated 64.8 billion USD was the entire value of Nigeria's exports in 2019. Although there was a little rebound in 2020 with exports valued at over USD 47.2 billion, the COVID-19 pandemic caused decline to around USD 36.2 billion. The overall value of Nigeria's imports rose from around USD 47.4 billion in 2019 to about USD 55.4 billion in 2020, suggesting a higher demand for imported goods in the country. Imports, however, fell in value to USD 52 billion that year (World Bank, 2022).

Nigeria remains one of the poorest countries in the world, as her trade increase has not elicited noticeable real economic outcomes and sustainable progress. Not only that, but the majority of Nigerians live on lower than \$2 USD a day, and more than half of the population lives in extreme poverty. Over 82.9 million Nigerians were living below the poverty line in 2019, with a poverty incidence of 40.1%, as published by the National Bureau of Statistics (NBS). More than 87 million people in Nigeria live on lower than \$1.90 a day, making it the country with the greatest estimated number of people living in severe poverty worldwide, as stated by the World Bank. There is a huge gap between Nigeria's rich and poor because of the country's heavy income inequality, which makes poverty even worse. Extracted from the 2022 Bureau of Statistics report in Nigeria, the income inequality statistic known as the Gini coefficient was 0.352, indicating a somewhat high degree of inequality. Is it not reasonable to infer that these troubling differences have ruled out the possibility that Nigeria's international commerce has substantially helped alleviating poverty over the years? An empirical examination into this subject is the goal of this paper. In light of the above, the research aims to provide empirical evidence of how international trade affects Nigeria's poverty level. The study will focus on the evaluation of the effects of total export, total import, with inclusion of foreign direct investment and official development assistance as supporting variables on the poverty index of Nigeria.

RELATED THEORETICAL AND EMPIRICAL REVIEWS

The followings are reviews of the theories and empirical studies that are selected to serve as guiding foundation for the present study:

Keynesian Theory of Income Determination

John Maynard Keynes introduced in 1936 the income determination theory of an open economy. The referred theory opined against the assumption that government spending, exports and imports bills be factored out of the specification for calculating national income of an economy. It therefore adds that the components; imports, exports, government spending, and taxes are all requisite unalienable quantities for estimating an economy's aggregate performance in terms of income. Like investments, government spending and exports boosts gross demand for goods and services. The national income stream receives these as injections. In contrast, taxes are kinds of national income leakages that, like savings and imports, reduce domestic gross demand capacity for driving economic activities.

The methodology for estimating an open-economy's gross income is predicated on the assumptions as stated. a) that the domestic economy's volume of trade outside its frontiers is small comparative to aggregate trade volume; b) the economy is not operating at 'full employment level'; c) the economy's general average price remains stable up to the level of full employment; d) constant rate of currency exchange; e) tariffs, trade, and exchange are not faced with restrictions; f) external indicators influence changes in aggregate exports; g) in the model, exports, investments, and government outlays are captured as exogenous; h) consumption outlays, imports' bills, savings, and taxes on earnings are individually shares of aggregate income, having linear association with it (income). Thus, a functional configuration of an open-economy's equation model is:

$$Y = C + I + G + (X - M) \quad (2.1)$$

In the specification above, Y, C, I, G, and X - M respectively represent the aggregated income of an economy, consumption outlays of households, firms' investment outlays, outlays of government, and trade balance (Jhingan, 2012).

Marxian Theory of Poverty

Karl Marx argued that the conditions under which poor people live are the outcome of a complex web of causes that make them helpless victims of the capitalist system (Alfandega, 2017). He revealed that capitalists, who control the means of production, need to shift their business practices from labour-intensive to capital-intensive methods of production if they want to boost productivity and profitability. but so doing will as a consequence generate increment in the number of people out of work and living in poverty. Massive unemployment will ensue as a consequence of capital-intensive industry since it will encourage capitalists to cut jobs in an effort to boost profits. No matter what happens, laid-off people will either seek employment in cities or find another line of work. However, capitalists' continuous cut down, and contributions of multiple systemic breakdowns may in number induce people living in poverty conditions.

Nepotism, racial and gender discrimination, and other systemic flaws were also named by Gordon (1982) as the causes of a certain group's lack of access to resources like jobs, schools, and welfare. One of the main points of Albrecht and Milford's (2001) argument was that as economic systems expanded, a whole people would be economically and socially marginalised. In the end, these communities' lack of possibilities leads to poverty. Theoretically, Marxist proposal may help reduce poverty by facilitating better production structures and providing more educational opportunities for those who otherwise have been considered estranged due to technical progress, as this would help them adjust to a new job setting and career path. So, the poor may follow the advice and launch small and medium-sized businesses with the help of government programs to reduce poverty issues in the long-run.

Empirical Literature

Using the ARDL method, Shido-Ikwu, Dankumo, Pius, and Fazing (2023) assessed the impact of foreign trade on Nigeria's GDP growth from 1981 to 2019. Two long-run equilibrating links and three long-run vectors were established from the ARDL bound test method. Furthermore, both the

short-term and long-term model findings indicated that import trade, the currency rate, and FDI have negligible and unfavourable effects; nevertheless, export trade has direct and substantial consequences throughout the research period. The effect of international commerce on the expansion of Nigeria's economy during the research period was negligible. In similar study, Falaye and Babatunde (2021) found that trade in exports substantially boosted the Nigerian economy, but import trade had no noticeable impact. Researchers Duru, Bartholomew, Okafor, Adikwu, and Njoku (2020) utilised the ARDL method to examine the connection between foreign trade and economic development in Nigeria from 1981 to 2018. The outcome indicated that, Nigeria's growth in economy is a result of its trading with other countries. Ejike, Anah, and Onwuchekwa (2018) appraised how Nigeria's economy has grown due to cross-border trading. They analysed the data from 1980 to 2015 utilising Ordinary Least Squares (OLS). The results indicated that foreign trade had a substantial and beneficial effect on Nigeria's economic development, and that this effect has persisted over time. Additionally, the findings showed that there was a priori violation as exports appeared inverse while imports appeared positive on the regressand.

Using data collected from 1986–2014, Adebisi, Eko, Nya, Arikpo, and Mbotor (2018) analysed the potential long- and short-term causal link between Nigeria's GDP growth and its trade surplus. After looking at the data, we can say that foreign trade has no long-term causal relationship with Nigeria's GDP growth rate. Furthermore, trade openness and exchange rate do not seem to have a short-term causal link with the growth rate of Nigeria's GDP. The total import trade, total export trade, and balance of trade had short-run direct relations with GDP growth rate in Nigeria. In their 2017 analysis, Lawal and Ezeuchenne appraised how foreign commerce contributed to economic growth. Imports, exports, trade balance, and trade openness are the causal quantities utilised to evaluate external trade, with real gross domestic product for economic growth from 1985 to 2015 as regressand. While trade balance and exports had long-term and short-term significance, trade openness and imports had little impact on the former but had big impact in the latter. The findings pointed to a correlation between GDP growth and foreign trade that persists over the long run. The granger causality test proved that trade openness has a unidirectional effect on economic growth, but that imports, exports, and the trade balance had no bearing on this growth. From 1981 to 2014, Babatunde, Jonathan, and Muhyideen (2017) examined the impact of international trade on Nigeria's economic development. The findings indicated a positive association between growth and government expenditure, interest rates, imports, and exports, whereas no correlation was seen between growth and the exchange rate nor foreign direct investment (FDI). Between 1985 and 2015, Lawal and Ezeuchenne (2017) examined the impact of international trade on Nigeria's economic development. The results indicated a unilateral link between trade openness and GDP growth, but insignificant long-run effects from imports and openness on economic progress indicator.

To determine how foreign commodity trade affected South Africa's economic growth, Sikobi (2021) utilised empirical analysis. Examining the impact of the top ten imported and exported goods from 2010 to 2019 is part of this process. Integrating the multiple linear regression model with a now-casting process. Regression analysis showed that none of the imported commodity categories substantially affected quarterly economic progress. They found that exporting cars and

car components was positively and substantially correlated with exporting plastic items. Analysis of the negative export goods reveals their massive export without much value addition. Another factor that helps mitigate the effect of certain commodities on GDP is the makeup of the HS code categorisation. Simon and Pingfang (2021) examined the influence of the digital economy on the economic growth of Africa within the framework of international commerce, utilising data from 53 nations spanning 2000 to 2018. They utilised the GMM, POLS, and random and fixed effects models to estimate the findings after further dividing the sample into five sub-regions. Among the findings were the following: (1) in the POLS estimations, trade only affects economic growth when it interacts with the digital economy; (2) in the RE, FE, and sys-GMM estimations, trade substantially affects economic prosperity; (3) in the capital and labour output elasticities, growth is positively and negatively affected; and (4) in the sub-sample regressions, there were statistically substantial differences in the indicator output elasticities.

Umeh, Nwali, and Obi (2022) appraised how multinational trade affected Nigeria's poverty reduction efforts. Between 1980 and 2019, total import value, total export value, and FDI were the factors that determined the rate of poverty reduction. Approach to data analysis made use of the ECM. Foreign direct investment had a favourably negligible influence on poverty reduction, total import value had a positively substantial impact, and total export value had a positively substantial impact. While other factors showed some importance in relation to poverty, Jelilov, Çelik, and Abdallah (2020) discovered that the exchange rate had a negligible effect. Additionally, they discovered that unemployment, inflation, and the foreign trade balance all had a key role in alleviating poverty in Nigeria. To find out how India's export intensity affects poverty outcomes, Komal and Madan (2020) conducted research. They utilised post-globalization time series data on India, spanning 1990–2012. Thus, the findings suggest that, with the right domestic policies in place, globalised commodity trade may help alleviate poverty in India. Between 1990 and 2017, the island of Mauritius was the subject of a research by Sheereen (2020) that appraised the impact of cross-frontier commerce on poverty reduction. In particular, the study appraised how trade openness, export value, and import value affected efforts to alleviate poverty. In consistent with the study's findings, commerce helps alleviate poverty in the long run, not just in the short-run. Between 2005 and 2014, Adegbemi, Babatunde, and Ogundajo (2019) appraised 21 African nations to see if trade liberalisation was associated with poverty. There was a positive correlation between the HDI and FDI and inflation rates, and a negative correlation between poverty and exchange rates and trade openness, as corresponding with the data. To find out how trade affected India's efforts to reduce poverty and develop, Komal and Madan (2017) conducted the research. This article argues that emerging nations may help alleviate domestic poverty by strong performance in international markets.

Literature Gap

Having empirically reviewed relevant literatures on the effect of foreign trade on poverty level, it was discovered that foreign trade on economic growth generated large volume of empirical studies with most studies providing mixed results and lack of consensus in their findings. Research on the relationship between Nigeria's international trade activities and poverty levels is, however, severely lacking. Most of these studies also only covered up to year, 2019. The current research

aimed to fill these gaps in knowledge and literature. The purpose of this study is to fill such gaps by conducting an empirical analysis of the relationship between Nigeria's poverty level and international trade over the course of 38 years (1985–2022). This time frame allows us to account for more current events than other studies of similar nature.

METHODOLOGY

Research Design

This study utilised an ex-post-facto research strategy, often called an after-the-fact research strategy. It comprises analysing preexisting data to learn more about the connections between dependent and independent variables and how they affect one another. Thus, the statistical bulletin of the Central Bank of Nigeria (CBN) and the World Bank Indicators (WDI) of the World Bank were the primary sources of data utilised to conduct the analysis for this research.

Estimation Model and Methods

This section of the study presents the model to be estimated. For a model to be considered recognised, its statistical form must be such that it permits the future estimation of parameters from sample data in a manner that is distinct from other models. The researchers in this study utilised an econometric model. The model, with slight modifications to include additional pertinent parameters for the current study, is derived on the framework established by Umeh, Nwali, and Obi (2022), who assessed the influence of foreign trade on poverty alleviation in Nigeria.

Expressing the model functionally is presented as:

$$PI = f(\text{TEX}, \text{TIM}, \text{FDI}, \text{ODA}) \quad (3.1)$$

By expressing the model in its econometric form, it is obtained as:

$$PI = \beta_0 + \beta_1\text{TEX} + \beta_2\text{TIM} + \beta_3\text{FDI} + \beta_4\text{ODA} + e_t \quad (3.2)$$

Expressed in its logarithmic form, the model is as follows:

$$\text{LOG}(PI) = \beta_0 + \beta_1\text{LOG}(\text{TEX}) + \beta_2\text{LOG}(\text{TIM}) + \beta_3\text{LOG}(\text{FDI}) + \beta_4\text{LOG}(\text{ODA}) + e_t \quad (3.3)$$

Where: f = Function of, PI = Poverty Index, TEX = Total Export, TIM = Total Import, FDI = Foreign Direct Investment, ODA = Official development assistance, β_0 = Constant variable, β_1 = Coefficient of Total Export, β_2 = Coefficient of Total Import, β_3 = Coefficient of Foreign Direct Investment, β_4 = Coefficient of Official Development Assistance, and e_t = Error term

Apriori Expectations

By comparing the parameters to the standard economic theory, the apriori expectations determined how well they performed. The theory of economics clarifies the nature of the variables' relationships. Below, in Table 3.1, the clear a priori expectations for this research are shown:

Table 3.1: A Priori Expectations

Variables	Coefficient	Mathematical Representation	Expected Relationship
Total Export	β_1	$\beta_1 > 0$	Positive
Total Import	β_2	$\beta_2 < 0$	Negative
Foreign Direct Investment	β_3	$\beta_3 > 0$	Positive
Official Development Assistance	β_4	$\beta_4 > 0$	Positive

Source: Researcher's Compilation, 2024.

A summary statistics analysis utilising Jarque-Bera statistics to assess whether the variables are normal is one of the analytical procedures utilised to empirically evaluate the given model. After that, the integration orders of the variables are estimated by conducting unit roots' analyses on them utilising the ADF test at 5% (Dickey & Fuller, 1981). Here we outline the generic ADF model for estimating unit roots:

$$\Delta Y_t = \lambda_0 + \lambda_1 + \delta Y_{t-1} + \sum_{i=1}^n \lambda_i \Delta Y_{t-i} + \mu_t \quad (3.4)$$

Where Y represents the time series variables under consideration, t denotes the linear time trend, Δ is the first difference operator, λ_0 is the constant term, n indicates the optimum number of lags on the dependent variables, μ_t represents the stochastic error term.

The ARDL Bounds test, developed by Pesaran, Shin, and Smith (2001), is then utilised to ascertain whether or not the variables are cointegrated. It is used when the variables' unit root analysis yields mixed orders of integration, i.e. stationarity at level I(0) and first differencing I(1). The procedure takes into account the presence of cointegrating relationships, the absence of cointegrating connections, or inconclusive relationships depending on whether the computed F-statistic value of the ARDL Bounds test is greater than the upper limit I(1), lower than the lower bound I(0), or somewhere in the middle of the two extremes. The general modelling for the ARDL Bounds cointegration is shown below:

$$Y_t = \Delta_t Y_{t-1} + \dots \Delta_p Y_{t-p} + \delta R_t + U_t \quad (3.5)$$

Where the time series variables under consideration in time t is denoted by Y_t , the cointegrating equations' estimates are represented as Y_{t-1} and Y_{t-p} , the First difference operator is denoted by Δ and U_t stands for the stochastic error term.

By expressing the long-run and short-run dynamic model in accordance with the ARDL specification for cointegration, we can test the statistical and theoretical importance of the link between the model's dependent and independent variables. The short-run and long-run versions of the ARDL model are therefore defined by Equation 3.6 below;

$$\begin{aligned} \Delta \ln(PI_t) = & \beta_0 + \beta_{1i} \Delta \ln(PI_{t-1}) + \beta_{2i} \Delta(TEX_{t-1}) + \beta_{3i} \Delta(TIM_{t-1}) + \beta_{4i} \Delta(FDI_{t-1}) \\ & + \beta_{5i} \Delta \ln(ODA_{t-1}) + \sum_{t=1}^p \alpha_{1i} \Delta \ln(PI_{t-1}) + \sum_{t=1}^q \alpha_{2i} \Delta(TEX_{t-1}) + \sum_{t=1}^q \alpha_{3i} \Delta(TIM_{t-1}) \\ & + \sum_{t=1}^p \alpha_{4i} \Delta(FDI_{t-1}) + \sum_{t=1}^p \alpha_{5i} \Delta \ln(ODA_{t-1}) + \lambda ECT_{t-1} + e_t \end{aligned} \quad (3.6)$$

Where: β_0 = regression intercept, $\beta_1 - \beta_5$ = long-run elasticities or coefficients of independent variables, $\alpha_1 - \alpha_5$ = short-run elasticities or coefficients of independent variables, Δ = operator's difference, t = time subscript, λ = speed of adjustment (< 0), e_t = error term, ECT = Lagged error correction term and all variables are as earlier defined.

The model was also put through post-diagnostic analyses i.e., the following tests to ensure robust and reliable estimations are, the Ramsey RESET test, which checks for correctness of specification; the Jarque-Bera normality statistic test, which checks for jointly normally distributed variables; the serial correlation test, which checks for serially independent residuals; and the heteroscedasticity test, which checks for homoscedasticity.

ANALYSIS RESULTS AND DISCUSSIONS

Descriptive Statistical Analysis

Tabulated in the descriptive statistics schedule in Table 4.1 below, are the results of the data characteristic analysis. From 1985 to 2022, the average poverty index is 60.73%. If we look at the poverty index, we can see that it ranges from 42.5% to 78.6%. Additionally, N6882.52 billion is the average total export. The range of export values is from N8.92 billion to N27251.57 billion. Moreover, the average sum of imports amounts to N5740.05 billion. The range of total import values is N5.98 billion to N27115.11 billion.

Table 4.1: Descriptive Statistics

	PI	TEX	TIM	FDI	ODA
Mean	60.72526	6882.522	5740.053	1545.042	1498.339
Median	61.51000	3845.335	2033.645	253.3050	304.7000
Maximum	78.60000	27251.57	27115.11	6075.480	11431.96
Minimum	42.50000	8.920000	5.980000	0.430000	66.68000
Std. Dev.	10.20928	7315.285	7265.606	1904.025	2204.128
Skewness	-0.493390	0.863930	1.399619	0.931337	2.776206
Kurtosis	2.220379	2.838987	4.115645	2.592670	12.28311
Jarque-Bera	2.504109	4.768085	14.37730	5.756164	185.2585
Probability	0.285917	0.092177	0.000755	0.056243	0.000000
Sum	2307.560	261535.8	218122.0	58711.61	56936.88
Sum Sq. Dev.	3856.488	1.98E+09	1.95E+09	1.34E+08	1.80E+08
Observations	38	38	38	38	38

Source: *Computation by researcher, 2024.*

Further, N1545.04 billion is the average amount of FDI. Direct investments from outside the country was as high as N6075.48 billion or as little as N0.43 billion. Finally, government aid for development typically amounts to N1498.34 billion. The average amount of government aid for development is proof of this. Both the greatest and lowest values of ODA are N11431.96 billion and N66.68 billion, respectively.

Pre-Estimation Tests

Unit Root Test

Observable below is the ADF test results in Table 4.3. Total import (TIM) reached stability at level, from the tabulated findings of the ADF unit root test comprising all variables. Reason being that, at the 5% level of significance, the total import (TIM) test statistic value is higher than the Mackinnon critical value [i.e., I(0)]. After first difference estimation, however, the poverty index (PI), total export (TEX), foreign direct investment (FDI), and official development assistance (ODA) all became integrated, given that their test statistic values are above the Mackinnon critical values at the 5% level of significance at first difference. This further proves that PI, TEX, FDI, and ODA are all integrated at the one-order level, or I(1). Attaining mixed stationarity (i.e., stationary at order zero and stationary at order one) in the variables required ARDL for estimating the long run associations among the variables.

Table 4.3: Augmented Dickey-Fuller (ADF) Unit Root Test Results mat

Augmented Dickey-Fuller (ADF)						
Variables	Levels	5% Critical Value	1 st Difference	5% Critical Value	I(d)	Stationary @
PI	-2.359201	-2.943427	-6.130409	-2.948404	I(1)	1st Diff.
LOG(TEX)	-2.264990	-2.943427	-4.936901	2.948404	I(1)	1st Diff.
LOG(TIM)	-4.364328	-2.945842	-	-	I(0)	Level
LOG(FDI)	-2.752600	-2.943427	-6.113356	-2.945842	I(1)	1st Diff.
LOG(ODA)	-1.058149	-2.948404	-5.781108	-2.948404	I(1)	1st Diff.

Source: *Computation by researcher, 2024.*

Lag Selection Criteria

Table 4.4 displays the outcome of the lag selection criterion. Results showed that lag three is the best lag length to get a substantial cointegration result utilising the Akaike Info Criterion (AIC), thus that is what this study utilised for further investigations.

Table 4.4: Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1378.303	NA	1.47e+28	79.04588	79.26807	79.12258
1	-1287.464	150.5335	3.47e+26	75.28364	76.61680	75.74385
2	-1222.590	88.96966	3.90e+25	73.00514	75.44926	73.84885
3	-1146.318	82.80962*	2.69e+24*	70.07531*	73.63039*	71.30253*

Source: *Computation by researcher, 2024.*

Bounds Cointegration Test

See Table 4.5 for the ARDL bounds cointegration test results. The results demonstrate a long-run correlation between the poverty index and the foreign trade variables utilised here (total import, foreign direct investment, government development aid, and foreign direct investment), highlighting the need for looking at the whole picture. For the variables TEX, TIM, FDI, and ODA, the calculated F-statistic is 5.353854. At the 10%, 5%, 2.5%, and 1% significance levels, respectively, the calculated F-statistic value (5.874789) is higher than the upper limit critical values of 3.09, 3.49, 3.87, and 4.37. Therefore, supporting conclusion that the indicators do in fact exhibit cointegration and reject the null hypothesis that there is no such relationship.

Table 4.5: Bounds Cointegration Test Results

Substanti al Level	Critical Value Bound		Hypothesis	F-Statistics
	I(0) Bound	I(1) Bound		
10%	2.2	3.09	H₀ : There is no long run relationship	5.353854
5%	2.56	3.49		
2.5%	2.88	3.87		
1%	3.29	4.37		
F _{PI(PI/TEX, TIM, FDI, ODA)}				K = 4

Source: *Computation by researcher, 2024.*

To further establish the long-run and short-run dynamic relations, estimating the coefficients of the dependent and independent variables by utilising the ARDL model analysis is necessitated by the outcomes of the pre-diagnostic estimates, which indicated mixed orders of stationarities and cointegrating association among the variables.

ARDL Long-Run and Short-Run Dynamics Results

Using the ARDL technique, the researcher assessed the long-term and short-term dynamic effects of the selected international trade indicators on poverty level. Table 4.6 displays the results, which shows that total exports had a negative and statistically substantial association with the poverty index in Nigeria, as palpable in the long-run estimations of the ARDL model. A p-value of 0.0059, which is lower than 0.05, and a negative coefficient value of -12.41593 for total export make this quite clear. This means that there is a long-term correlation between a one billion Naira rise in total export and a 12.42% substantial drop in the poverty index. Additionally, total exports substantially impacted the poverty index in a negative way in the short-run predictions of the ARDL model. The fact that the overall export coefficient is negative (-0.456839) and has a p-value of 0.0021, which is lower than 0.05, proves this. Accordingly, a one-billion-naira boost to overall export value is associated with a short-term reduction in the poverty index of around 0.46%. When coupled with the appropriate domestic policies, globalised commerce of export commodities may be a powerful engine for reducing poverty in India as found by Komal and Madan (2020), which agrees with the current exposition.

In addition, the long-term estimates showed that total import had a positive and statistically substantial link with Nigeria's poverty index. Its exhibited lower p-value of 0.0385 relative to 0.05, and its positive coefficient value (5.442420) are indicative; meaning that a one billion naira increase in the overall cost of imports was substantially associated with a 5.44 percent rise in the poverty index over time. There was a positive and statistically substantial short-run influence of total import on the poverty index from the short-run estimates. The fact that the p-value is $0.0198 < 0.05$ and the coefficient value is positive (9.231044) is evidential. This indicates that there was a short-term substantial increase of 9.23% in the poverty index for every one billion Naira increase in the overall import cost. A comparable finding by Umeh, Nwali, and Obi, 2022 indicated that total import value exerted a 79% directly significant effect on poverty in Nigeria

Table 4.6: ARDL Long-Run and Short-Run Estimation Results
Dependent Variable = PI

ARDL Long-Run Results				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOG(TEX)	-12.41593	4.057848	-3.059732	0.0059
LOG(TIM)	5.442420	2.465493	2.207437	0.0385
LOG(FDI)	-7.639147	2.448854	-3.119478	0.0052
LOG(ODA)	-2.073435	4.208344	-0.492696	0.6273
C	27.52298	35.11605	0.783772	0.4419
ARDL Short-Run Results				
D(PI(-1))	-0.621112	0.133440	-4.654601	0.0001
DLOG(TEX)	-0.456839	0.130144	-3.510254	0.0021
DLOG(TIM)	9.231044	3.660981	2.521468	0.0198
DLOG(TIM(-1))	-8.798501	3.220569	-2.731971	0.0125
DLOG(FDI)	-14.32636	3.523187	-4.066307	0.0006
DLOG(FDI(-1))	12.41593	3.104738	3.999026	0.0007
DLOG(ODA)	-4.707016	1.528925	-3.078644	0.0057
DLOG(ODA(-1))	-5.442420	1.485175	-3.664497	0.0014
CointEq(-1)*	-0.014594	0.003490	-4.181599	0.0004

Adjusted $R^2 = 0.555010$

Durbin-Watson stat = 1.923158

Source: Computation by researcher, 2024.

Moreover, the estimates demonstrated that FDI had a statistically substantial negative impact on the poverty index over the long term. The p-value (0.0052) is lower than 0.05, and the negative coefficient value (-7.639147) substantiates. In other words, a one billion Naira increase in FDI lead to a 7.64% drop in the poverty index over the long term. Additionally, the short-term results showed that FDI had a negative and statistically substantial link with Nigeria's poverty index. This is evident with p-value of 0.0006 lower than 0.05, and the negative coefficient value (-14.32636)

makes very clear. This indicates that there was a short-term, 14.33% substantial drop in the poverty index as a result of a one billion Naira increase in FDI inflows. Jelilov, Çelik and Abdallah (2020) previously discovered that factors related to international commerce substantially impact the alleviation of poverty in Nigeria, and the current conclusion is in line with their results.

Following the estimates, government's received development aid had negative and negligible long-term impacts on Nigeria's poverty index. The fact that the p-value is greater than 0.05 and the coefficient is negative (-2.073435) proves this. This suggests that with an increase of one billion Naira in ODA, the poverty index decreased by around 2.07% over the long term, which is not statistically substantial. Official development assistance had a non-substantial negative short-effect on the poverty index in Nigeria as shown in the estimates. The fact that the coefficient is negative (-4.707016) and the p-value is lower than 0.05 (0.0057) proves this. This indicates that there was a 4.71% drop in the poverty index in the short-term after a one billion Naira boost in government development aid. This result is associated with the one of Adegbemi, Babatunde, and Ogundajo (2019), who discovered that 21 African nations had a decrease in poverty as a result of government development aid.

Table 4.6 also provides the short-run dynamic coefficients related to the long-run as portrayed from the error correction term's (ECT) estimates. The short-run coefficient sign of the ECT is associated with the long-term stability. With a p-value of 0.0004 which is highly substantial, the estimated error correction coefficient (-0.014594), is correctly indicated, and suggests a slow rate of adjustment to equilibrium after short-run shock. This means that around 1.5% of the disequilibria caused by the shock last year converge to the long-term equilibrium in the current year. In addition, the short-run estimates in Table 4.6 showed an Adjusted R-squared value of 0.555010, which means that the model fits the data well. This is because the model as capturing changes in total import, total export, FDI, and ODA accounted for around 56% of variance in the poverty index, with 44% attributable to factors outside the model.

Post-Estimation Results

Table 4.7 displays the results of the post-estimation tests, which showed that none of the diagnostic tests were statistically substantial at the 0.05 level with respect to the tabulated probability values.

Table 4.7: Post-Estimation Test Results

Test	Test Type	X ² Value	X ² Prob	Decision
Normality Test	Jarque-Bera Test	0.717544	0.698534	Do not Reject H ₀
Serial Correlation Test	Breusch-Godfrey LM Test	0.013462	0.9866	Do not Reject H ₀
Heteroscedasticity Test	Breusch-Pagan-Godfrey	1.771429	0.1178	Do not Reject H ₀
Functional Form Test	Ramsey RESET	0.779608	0.3878	Do not Reject H ₀

Source: Computation by researcher, 2024.

Each of the model's variables follows joint normal distribution as indicated by the Jarque Bera (Normality) test. There is no issue with serial correlation in the model as evident from the Breusch-Godfrey Serial Correlation LM test. Homoscedasticity, as shown by the Breusch-Pagan-Godfrey heteroskedasticity test, means that important factors were not left out. Finally, the model is properly modelled as shown by the Ramsey RESET test result. This proves the model's functional form is good. On the whole, it is obvious that the model's estimate is generally fit and appropriate for recommending policies.

CONCLUSION AND RECOMMENDATIONS

Concluding Remark

Empirically appraised in this research is how selected measures of Nigeria's multinational trade activities have affected the country's poverty rate. The results showed that total imports had positive influence on the poverty index in Nigeria, but total exports, FDI, and government development aid had reducing impacts. Conclusively, the results provided strong evidence that international trading policy is critical for pursuing poverty reduction in Nigeria.

Recommendations

The subsequent suggestions are presented in accordance with the study's conclusions and findings:

- i. The government should prioritise the development of non-oil sectors comprising agriculture, industry, and technology in an effort to diversify the export base beyond crude oil, since the overall export value had a negative and substantial impact on the poverty index in Nigeria.
- ii. The government should put measures in place to encourage the local production of commodities that are now imported, especially in the agricultural and industrial sectors, since overall imports have positive and substantial impacts on the poverty index in Nigeria.
- iii. The government should foster an inviting investment environment to entice FDI, especially in industries with the ability to generate numerous job opportunities (e.g., manufacturing, agriculture, and renewable energy), since total export had a negative and substantial impact on Nigeria's poverty index.
- iv. Total export had a negative and statistically substantial effect on the poverty index; thus, the government of Nigeria should channel ODA into programs that improve social infrastructure, like schools, hospitals, and job training centres, to in the long-run reduce poverty.

REFERENCES

- Adebisi, A. W., Eko, E. U., Nya, E. E., Arikpo, O. F. & Mbotor, E. D. (2018). *Influence of trade liberalization on the growth of Nigerian economy: Autoregressive distributed lag approach*. *European Journal of Accounting, Auditing and Finance Research*, 6(7), 87-106.
- Adegbemi, O., Babatunde, J. & Ogundajo, G. (2019) Poverty and trade liberalization: empirical evidence from 21 African countries. *Economic Research-Ekonomska Istraživanja*, 32(1), 635-656.
- Albrech, D. E. & Milford, A. (2001). Poverty, Inequality and Social Justice in Nonmetropolitan America. 1-32.

- Alfandega, E. M. (2017). *Theories of poverty reduction as they apply to the Gorongosa. Case study in alleviating poverty through local resources and initiatives*. Conference paper, 1-15.
- Babatunde, A., Jonathan, D. D., & Muhyideen, I. A. (2017). International trade and Nigeria economy. *Global Journal of Human-Social Sciences: Economics*, 17(5), 29-39.
- Dickey, D. A. & Fuller, W. A. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*, 49, 1057-1072.
- Duru, I. U., Bartholomew, O. N., Okafor, F., Adikwu, O. & Njoku, F. C. (2020). Trade liberalization and economic growth: An assessment of Nigerian experience. *Asian Development Policy Review*, 8(3), 194-213.
- Ezindu, O. N., Onwuka, I. N., Okoli, U. V. & Udeze, R. C. (2020) Impact of international trade on Nigerian economic growth: Evidence from oil terms of trade; *International Journal of Economics and Financial Management*, 5 (2); 20- 31.
- Ejike, D. C., Anah, S. A. & Onwuchekwa, F. C. (2018). Trade liberalization and economic growth in Nigeria: A analysis (1980-2015). *Journal of Business Management*, 1(1), 1-8.
- Falaye, M. H., & Babatunde, A. (2021). International trade and economic growth in Nigeria. *International Journal of Management*, 12(1), 620-631. Doi:10.34218/IJM.12.1.2021.053.
- Gordon, R. J. (1982). "Inflation, Flexible Exchange Rates, and the Natural Rate of Unemployment." In Martin N. Baily, ed., *Workers, Jobs, and Inflation*, Washington: Brookings, 88-152.
- Jelilov, G., Çelik, B. & Abdallah, R. A. (2020). Does foreign trade have an impact on poverty level in Nigeria? *Reality on Ground. International of Journal Management and Social Researches*, 7(13), 46-59.
- Jhingan, M. L. (2012). *Macroeconomic theory*. Delhi, India: Vindra publications Delhi
- Komal, C. & Madan, L. (2017). Role of trade in growth and poverty reduction: A review of literature with special reference to India. *Journal of International Business*; 4 (2), 101-123.
- Komal, C. & Madan, L. (2020) The role of international trade in poverty reduction: A case study of India; *Journal of Commerce & Accounting Research*, 9(2), 27-40.
- Lawal, E. O. & Ezeuchenne, K. (2017) International Trade and Economic Growth in Nigeria; *Journal of Humanities and Social Science* 22 (6): 35-43.
- Lawal, E. O. & Ezeuchenne, K. (2017). International trade and economic growth in Nigeria. *IOSR Journal of Humanities and Social Science*, 22(6), 33-43.
- Obadan, M. I. (2010). *Globalization: Concepts, opportunities and challenges for Nigeria development*. Text of a Paper Presented at the Training Programme on Economic Reform.
- Owolabi-Merus, J., Inuk, O. & Odediran, T. (2015). Foreign trade and the Nigeria economy. *The Quarterly Journal of Economics*, 90 (2), 334–343.
- Pesaran, M. H., Shin, Y. & Smith, R. J. (2001). Bound Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics*, 16(3), 289-326.
- Sheereen, F. (2020). Investigating the impact of trade on poverty reduction in a small island economy. *International Journal of Economics and Financial Management*; 5(2), 20-31.
- Shido-Ikwu, K., Dankumo, I., Pius, G. & Fazing, L. (2023). External trade policies and economic growth in Nigeria. *International Journal of Financial Research*, 6(3), 7 – 18.

- Sikobi, A. P. (2021). The impact of international trade of commodities on the economic growth of South Africa. A dissertation submitted at the World Maritime University.
- Simon, A. & Pingfang, D. (2021). International trade and economic growth in Africa: The role of the digital economy. *Cogent Economics & Finance*, 9, 1 <https://doi.org/10.1080/23322039.2021.1911767>
- Umeh, A. C., Nwali, S. O. & Obi, A. N. (2022). Impact of international trade on poverty reduction in Nigeria: An approach of time series econometric model. *Himalayan Economics and Business Management*, 3(2), 24-31.
- World Bank. (2022). *Commodity Markets Outlook: Causes and Consequences of Metal Price Shocks*. Washington, DC: World Bank.