THE EFFECT OF TARIFFS ON NIGERIA'S FOREIGN TRADE

AMADI, NYEKACHI .N. (Ph.D.)
Department of Economics,
Ignatius Ajuru University of Education, Port Harcourt.

Abstract

This study examined the effect of tariffs on Nigeria's foreign trade. The data for this study were from the Central Bank of Nigeria statistical bulletin between the period 1981 and 2018. The study used both descriptive statistics and the framework of Engel-Granger cointegration/error correction modeling for data analysis.The study used tariff, exchange rate, trade openness as explanatory variablesand non-oil export was used as the dependent variable which servedas proxy for trade.From the analysis carried out, the study found the existence of a long run relationship between the variables. Tariff and trade openness were both positive and significant impact on trade in Nigeria. On the other hand, exchange rate has a negative but insignificant impact on trade in Nigeria. Based on the findings, study recommended that higher tariff be imposed on imported goods in order to foster growth of selected industries that can produce such goods and that the economy be allowed some degree of openness to enable Nigeria export some of her goods to the rest of the world.

Keywords: Trade, Tariffs, Exchange Rate, Trade Openness

Introduction

International trade is regarded as a vital part of every nation's economic activities. It involves the transfer of capital, goods and services across international boundaries or borders. Arogundade, Obalade and Ogunmakin (2015) explained that international trade came to be as a result of the uneven and varying distribution of natural resources, technical knowledge, and climatic conditions in different part of world. As noted by Ricardo (1859)in his comparative advantage cost theory,that improvement in production of goods, transfer of technology, larger market and better living standards can only occur if countries focus their attention on producing and exchanging those goods in which their resources are best suited for (Bay, 2005; Arogundade, Obalade & Ogumakin, 2015).

In line with the above, one can say that the trade relation between Nigeria and other countries is an integral part of the nation's economy. Over the years, trade in the country has improved due to its multilateral ties with other countries. Notwithstanding, Adedayo (2006) opines that developing countries that want to fast track their economic growth and development should not adopt free trade since it is not the proper commercial policy for such countries. As a result of the above, some scholars have argued for protection. One of such protection instruments that are used in Nigeria is Tariff. Oladapo (2010) defines tariff as a tax that the state usually levies on commodities that are imported. Tariff is associated with protectionism which is an economic theory for preventing trades among nations.

Besides serving as a means of revenue generation for the government in several countries, tariff policy is also useful in achieving some policy objectives such as industrialization, rapid economic growth and development. This is achieved through the protection of production activities by infant industry, and substitution of imports (Akinlo, 1996; Arogundade, Obalade & Ogumakin, 2015).

Arising from the above, Alaba (2000) assert that Tariff has become very useful overtime, as an important discriminatory tool for the prevention of the importation of certain goods in Nigeria. On the other hand, the proponents of free trade view protectionism as a way to curb growth in industry. As a result, they argue that some industries have remained protected under the disguise of infant industry, hence making protectionism seem like a permanent feature. However, the effects of tariff as a form of protection on trade by Nigerian firms remain unclear. Given this concern, this study sets out to investigate the effect tariff on Nigeria's foreign trade. This paper is structured into five sections. These include: the introduction, literature review, materials and methods, results and discussions, and conclusions and recommendations.

Literature Review

This paper is anchored on trade protection theory. It explains a deliberate attempt to limit imports or promote exports by putting up barriers to trade. Despite the arguments in favour of free trade and increasing trade openness, protectionism is still widely practiced. The main arguments for protection are

that barriers to trade can be used to protect sunrise industries, also known as infant industries, such as those involving new technologies. This gives new firms the chance to develop, grow and become globally competitive. Protection of domestic industries may allow them to develop a comparative advantage. For example, domestic firms may expand when protected from competition and benefit from economies of scale. As firms grow they may invest in real and human capital and develop new capabilities and skills. Once these skills and capabilities are developed there is less need for trade protection, and barriers may be eventually removed. At the other end of scale are sunset industries, also known as declining industries, which might need some support to enable them to decline slowly, and avoid some of the negative effects of such decline.Barriers may also be erected to protect strategic industries, such as energy, water, steel, armaments, and food. The implicit aim of the Nigerian government to impose high tariff and ban importation of Rice is to boost local production and non-oil exports to foreign exchange by protecting the farmers and agricultural sector.

Few researchers have investigated the effect of tariffs on trade of countries. For instance; Adeoye and Ajuwon (2010) examined the possible impact of trade distortions captured by the nominal exchange rate on the growth of the Nigeria economy. The work adopted the Ordinary Least Squares (OLS) technique of multiple regressions to estimate the data. The result shows that one of the major distortions preventing the free flow of goods and services from the Nigerian economy is the vagaries in the behaviour of the exchange rate. Therefore, this paper supports the earlier hypothesis that trade libearlization in Nigeria has some negative impacts on the economy's growth level. This paper reiterates that until the distortions to trade are removed the economy cannot adequately benefit from the ongoing reforms in the real sector. It therefore recommends the need for the government to speed lip the process of domestic reforms. Government must accelerate reforms in trade and industrial policies along with macroeconomic policies that provide a favourable environment for enterprises competing in the global market, as well us attracting foreign investors.

Ezike and Ogege (2012), investigated Nigeria foreign trade policy and its impact on non-oil export. The study used both correlation analysis and least

square techniques. Their finding shows that there is a negative relationship between trade policies and non-oil export in Nigeria. However, non-oil export has positive effect on economic growth in Nigeria; also exchange rate is positive and significant at 5% level of significance. They therefore recommend that a country that diversifies its export base stand a better chance of achieving economic growth. Thus, a trade policy that focuses mainly on a mono-product in this case crude petroleum is flawed and exposes the country to instability and external shocks incidental to the global oil market. Nigeria would therefore be better-off if it makes effort to diversify its economy by encouraging production and exportation of nonoil products.

Employing the ordinary least square and using time series data from 1970 to 2006, David-Wayas (2015) investigated how trade barriers affects Nigeria's economic growth. The research findings revealed that total export, openness and tariff had positive effect on Nigeria's economic growth while total import and ratio of export to GDP had adverse effect on Nigeria' economic growth. The study concludes that economic growth in Nigeria is positively and statistically impacted on by trade barriers.

In another study, Okere and Iheanacho (2016) employed the autoregressive distributed lag (ARDL) bounds test approach to co-integration on data set from 1990 to 2013 to analyze how protectionist trade policy indirectly affects Nigeria's economic growth. The error correction model confirms the existence of a long run relationship between the variables. Empirical findings show that labour, unemployment, real GDP per capital and industrial production have no long run causal relationship, while there is a short run unidirectional causal relationship that flows from industrial production and unemployment to GDP per capital. Also, a unidirectional causal relationship flows from industrial production and GDP per capital to labour. The study therefore concludes that an indirect link exist between economic growth and protectionist policy in Nigeria. The link occurred through unemployment rate and industrial protection.

Yasiru (2017) investigated the impact of globalization on non-oil export performance in Nigeria. Using time series data, the paper employed the Autoregressive Distributed Lag (ARDL) approach to analyze the relationship between globalization and non-oil export performance within the periods of

1970 to 2014. The results revealed that there is a long-run relationship between globalization and non-oil export performance in Nigeria. The parameter estimates showed that globalization, official development assistance, investment and exchange rate have positive impact on non-oil sector export in Nigeria. In addition, gross domestic product and foreign direct investment have negative impact on non-oil sector export performance in Nigeria. The study concludes that the impact of globalization on non-oil export performance is a long-run phenomenon. Thus, the government should adopt and implement trade policies that are capable of sustaining non-oil sector growth in Nigeria.

Expressing concerns about the China-Us trade wars, Li, He and Lin (2018) empirically simulated the possible effects of China-Us trade wars by adopting a multi-country global general equilibrium (GE). Findings from the simulation show that the trade war would hurt the economy of China significantly, though with affordable adverse effects. On the other hand, a unilateral sanction measures on puts the US in a gaining position. However, retaliation measures by China hurt the US economy. Findings also show that, the US gains more than China under mutual trade war, and that the introduction of non-tariff barrier trade war further harms China as its negative effects are more to China than to the US. The study concludes that though the US has a stronger bargaining power than China, trade wars between both countries benefits the welfare of both countries while other countries are adversely affected.

Following the adoption of series of liberalization reforms simultaneously by member countries of BRICS from the late 1980s, Burange, Ranadive and Karnik (2019) examined the relationship between trade openness and economic growth nexusof BRICS member countries. It captures structural composition of GDP and openness of trade in four aspects, that is, merchandise exports, merchandise imports, services export and services import. In India, the study found growth-led trade in services hypothesis. Their finding supports the growth-led export and growth-led import hypothesis for China and export- and import-led growth for South Africa. However, no causal relationship was evident for Brazil and Russia.

Ikpe, Ojike, and Ahamba (2020) investigated in their study on whether trade liberalization policies enhance performance of non-oil export trade in Nigeria? The study adopted an Autoregressive Distributed Lag model approach to the analysis of the impact of trade liberalization policy on non-oil export trade. Evidence provided support for trade liberalization policy as the growth driver for non-oil export, a sector that exports more but earns little in terms of revenue. As a result, the study recommends a well thought-out public–private partnership arrangement for the efficiency of the private sector (a major player in non-oil export trade), to optimally harness the benefits of liberalization in Nigeria's non-oil trade sub-sector.

Summary of Literature Reviewed and Research Gap

From the review of literature, it was discovered that some scholars investigated how trade distortions or protectionism affects economic growth (Adeoye and Ajuwon, 2010; David-Wayas, 2014 and Okere and Iheanacho, 2016). Others like Oas (2014) and Aiyedogbon and Ohwofasasa (2016) examined how trade liberalization affects economic growth. This study defers from other scholars by examining the effect of tariffs on trade in Nigeria by regressing non-oil export (NOXP) a proxy for trade on tariffs (TARF), exchange rate (EXRC) and trade openness (TOPN) from 1981 to 2018. This is the gap the study filed in literature.

Method of Analysis

Specification of Model

The study adopted the protectionist theory and empirical model of Adeoye and Ajuwon (2010) with modifications as follows:

$$NOXP = f(TARF, EXRC, TOPN) \quad 1$$

The econometric model to be estimated takes the form of;

$$NOXP = a_0 + a_1TARF + a_2 EXRC + a_3TOPN + U_t \quad 2$$

Where:

NOXP = Non-Oil Export a proxy for trade

TARF = Tariffs

EXRC = Exchange Rate

TOPN = Trade Openness

U_t = Stochastic element

Thus, a priori expectations are TARF and EXRC < 0 while TOPN> 0

Data Sources and Estimation Technique

The data set employed in the empirical analysis of the model was sourced from the Statistical Bulletin of the Central Bank of Nigeria (various issues), relevant journals and from the database of other institutions. The data set span from the period 1981 to 2018. Tariff, trade openness and exchange rate are employed as the explanatory variables, while non-oil export as proxy for trade is employed as the dependent variable. The data was analyzed using both descriptive statistics and empirical analysis of ordinary least square (OLS) techniques such as the Engel-Granger co-integration and error correction modelling (ECM) technique.

Results and Discussion

The analysis of the time series data obtained for the study was done in five different stages. First we present the descriptive statistics, after which a unit root test was conducted in order to ascertain the stationarity of the variables. The co-integration test, error correction mechanism and diagnostics tests were also conducted to determine the effects of the independent variables on the dependent variable.

Descriptive Statistics

Here, we present the descriptive statistics of the data set in the table below.

Table 1: Results of the Descriptive Statistics

	LOG(NOXP)	LOG(TARF)	LOG(TOPN)	LOG(EXRC)
Mean	3.386694	4.211939	3.815346	3.429504
Median	3.353187	4.553031	3.946617	4.577656
Maximum	7.268362	7.090160	4.404399	5.726587

Minimum	-1.609438	0.482426	3.031099	-0.494296
Std. Dev.	2.819986	2.313968	0.410117	1.981207
Skewness	-0.264506	-0.243533	-0.570843	-0.754089
Kurtosis	1.864979	1.672495	2.017523	2.273799
Jarque-Bera	2.482865	3.165879	3.592125	4.436453
Probability	0.288970	0.205371	0.165951	0.108802
Sum	128.6944	160.0537	144.9831	130.3212
Sum Sq. Dev.	294.2359	198.1146	6.223245	145.2318
Observations	38	38	38	38

Source: *Author's Computation Using E-views 9.0*

From Table 1, the result shows that the standard deviation calculated for non-oil export was the most volatile in the series with a value of 2.819986 while state of trade openness was the least volatile variable with a value of 0.410117. The calculated values for the skewness statistic for all the variables – NOXP, TARF, EXRC, and TOPN were negatively skewed, suggesting that their distributions have a long left tail. Statistics of the Kurtosis of the variables indicate a platykutic mode of distribution. This implies that the distribution of the variables exhibit a flat trend as against the expected normal distribution. This suggests the presence of unit root and that the estimation of the variables would result to a spurious regression. The study therefore conducted the Augmented Dickey-Fuller unit root test, to test for the stationarity of the variables employed in the study

Unit Root Test

The results of the Augmented Dickey-Fuller unit root test as presented in Table 2 below reveals that all the choice variables TARF, TOPN, NOXP, and EXRC became stationary after their first difference.

Table 2: Result of the Augmented Dickey-Fuller Unit Root Test

Augmented Dickey Fuller (ADF) Test					
Variables	Level	5% Critical Values	1st Diff.	5% Critical Values	Order of Integration
LOG(NOXP)	-0.893786	-2.943427	-7.153737	-2.945842	I(1)
LOG(TARF)	-1.020547	-2.943427	-5.445160	-2.945842	I(1)
LOG(TOPN)	-0.712924	-2.963972	-5.438138	-2.945842	I(1)

LOG(EXRC)	-2.007005	-2.943427	-5.235013	-2.945842	I(1)

Source: *Author's Computation Using E-views 9.0*

Co-integration Test Result and Analysis

The co-integration test was conducted after establishing that the series are integrated of the same order, that is, of order one (1(1)). The Study employed the Engle-Granger two step co-integration procedures, and the result is presented in Table 3 below.

Table 3: Engle Granger Co-integration Test Results

Variable	Level	5% Critical Values	Order of Integration	Remarks
RESID(ECM)	-3.612505	-2.943427	I(0)	Co-integrated
Stationary at both 1%, 5% and 10% Level of Significance				

Source: *Author's Computation (2019)*

Results of the co-integration test show that the residual of the regression are stationary at the 5 percent level of significance. This implies that Tariff, exchange rate, and trade openness which serves as the explanatory variables are seen to be co-integrated with non-oil export in Nigeria in the period under review. Thus, there exists a long run relationship between the explained variable non-oil export and its explanatory variables tariff, exchange rate and trade openness.

Parsimonious Error Correction Model

In order to affirm the existence of a long-run relationship between the variables, we employed the error correction model technique. The result which is based on the principle of general to specific is presented in Table 4 below.

Table 4: Parsimonious ECM Result

Dependent Variable: DLOG(NOXP)				
Method: Least Squares				
Sample (adjusted): 1984 2018				
Included observations: 35 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.143088	0.079769	1.793776	0.0837

DLOG(NOXP(-2))	0.169197	0.125253	1.350837	0.1876
DLOG(TARF)	0.697375	0.170218	4.096944	0.0003
DLOG(TOPN)	0.478522	0.265595	1.801698	0.0824
DLOG(TOPN(-1))	0.459901	0.268463	1.713089	0.0977
DLOG(EXRC(-2))	-0.249622	0.202991	-1.229717	0.2290
ECM(-1)	-0.583204	0.145662	-4.003822	0.0004
R-squared	0.583069	Mean dependent var		0.242067
Adjusted R-squared	0.493726	S.D. dependent var		0.452535
S.E. of regression	0.321992	Akaike info criterion		0.748274
Sum squared resid	2.903001	Schwarz criterion		1.059344
Log likelihood	-6.094797	Hannan-Quinn criter.		0.855655
F-statistic	6.526225	Durbin-Watson stat		1.797564
Prob(F-statistic)	0.000215			

Source: *Author's Computation Using E-views 9.0*

The result as presented in Table 4 above show that tariff has a positive and statistically significant relationship with non-oil export in Nigeria at the 5 percent level of probability. The sign of the coefficient of tariff conforms to a priori expectation. The result implies that a one percent increase in tariff leads to increase in Nigeria's non-oil export.

In addition, findings show that exchange rate has a negative but insignificant impact on non-oil export in Nigeria. It is observed that an appreciation of the exchange rate reduces the volume of non-oil export in Nigeria.

The result also revealed that trade openness has a positive but statistically insignificant impact on non-oil export in Nigeria. This suggests that as Nigeria opens her borders and trades with the rest of the world, non-oil export improves, though insignificantly in the period under review. The coefficient of trade openness is line with economic theory.

The adjusted R squared of 0.493 that the model accounted for on 49 percent of the variation in the explained variable non-oil export, and that the other 51 percent of the variations in non-oil export is accounted for by the error term or the white noise. The F-statistics of 6.526 indicates that the overall model is significant at the 5 percent level of significance and can be used for forecast. The sign of the error correction model is in line with a priori expectation and

shows that 58 percent disequilibrium in the non-oil export in previous year is corrected for in the current year. Finally, the Durbin-Watson statistics value of 1.797 indicates the absence of serial correlation or autocorrelation.

Diagnostic Test Results

The diagnostic tests conducted for this paper include the Normality test, the Serial Correlation test, Heteroscedasticity test and the Stability test. The normality test was conducted using the Jarque-Bera Statistics, while the Serial Correlation test was conducted using the Breusch-Godfrey Serial Correlation LM Test. The Breusch-Pegan-Godfrey test was employed in order to conduct the heteroscedasticity test, while the cumulative sum (CUSUM) and cumulative sum squared (CUSMSQ) test were conducted to test for the stability of the model. Results from Table 5 show that the estimated model scaled through the post estimation test. Figures 1 and 2 as presented below show that the plots of the cumulative sum and the cumulative sum squared lie within the 5 percent critical limit. This implies that the model passed the stability test as well.

Table 5: Diagnostic Test Results

Test	**Result**	**Prob.**
Normality Test	0.274493	0.8717
Breusch-Godfrey Serial Correlation LM Test	0.224775	0.8002
Heterosckedasticity Test	1.530899	0.2047

Source: *Author's Computation Using E-views 9.0*

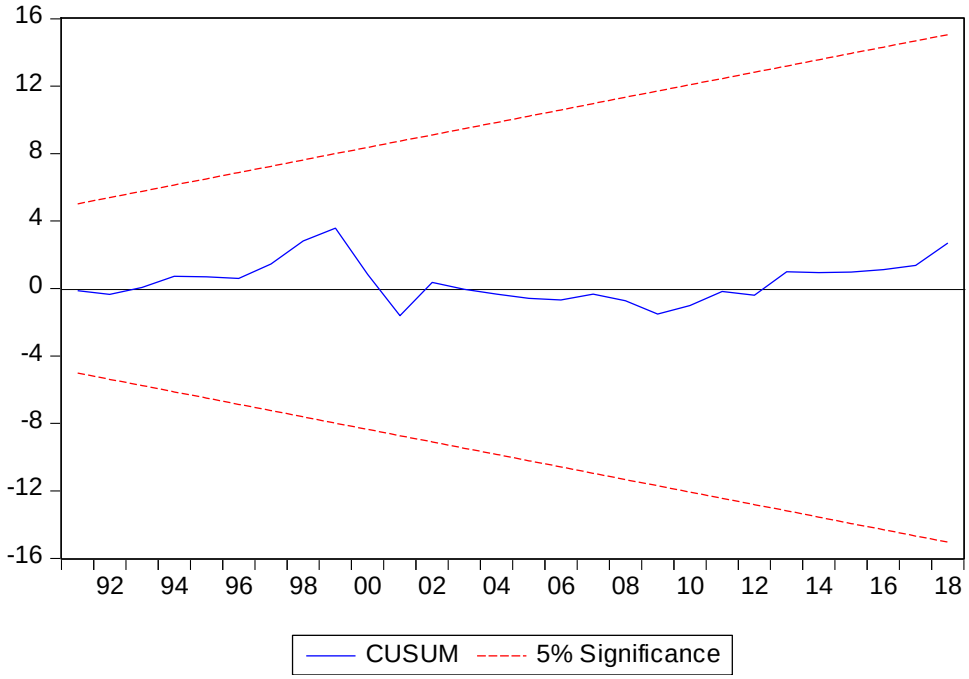


Figure 1: Stability Test Result based on CUSUM

Conclusion

This study empirically examined the effect of tariffs on trade in Nigeria from 1981 to 2018. The study employed both descriptive and empirical analysis. Data for tariff, exchange rate, trade openness and non-oil export were sourced from the statistical bulletin of the Central Bank of Nigeria. Findings from estimated model show the existence of a long run relationship between non-oil export and its explanatory variables. Tariff and trade openness are seen to impact positively and significantly on trade in Nigeria, while exchange rate has a negative and insignificant impact on trade in Nigeria.

From the findings above, the study makes the following recommendations:

- To foster growth in selected industries, government should impose tariff on importation of goods that can be produced by those selected industries.
- Tariff should also be imposed on goods that are perceived to endanger the population.

- Some levy of openness to trade should be allowed. This would enable Nigeria export some of her goods to the rest of the world.

References

Adedayo, O. (2006). Structural Aspect of Third World Trade: Some Trends and Some Prospects. *Journal of Development Studies, 15*(3), 10-26.

Adeoye, B. W. & Ajuwon, O. (2010). Impact of Trade Distortions on Economic growth: The Case of Nigeria. A paper presented at the *51st Annual Conference of the Nigerian Economic Society (NES)* in Abuja between 21st and 23rd September, 2010.

Aiyedogbon, J. O. & Ohwofasa, B. O. (2016). Effect of Trade Liberalization on Economic growth in Nigeria, 1980-2013. *International Journal of Developing and Emerging Economies, 4*(2), 15-27.

Akinlo, C. L. (1996). Trade Policy and Productivity growth: Final Report Presented at a Workshop by *African Economic Research Consortium (AERC),* May 28 – June.

Alaba, M. T. (2000). Trade Openness and Manufacturing Sector growth: An empirical analysis for Nigerian. *Mediterranean Journal of Social Sciences, 3*(11), 637-646.

Arogundade, K. K., Obalade, A. A. & Ogumakin, A. A. (2015). The Infant Manufacturing Industry argument on tariff: the Nigeria Hypothetical Example. *International Journal of Academic Research in Business and Social Sciences, 5(*6), 1-10.

Bay, S. (2005). Impact of Nigeria on its Import Substitution Trade. *London: Allen and Urwin.*

Burange, L. G., Ranadive, R. R., Karnik, N. N. (2019). Trade Openness and Economic growth nexus: A case study of BRICS. *Foreign Trade Review, 54*(1), 1–15.

David-Wayas, O. M. (2014). Empirical Analysis of Trade Barriers and Economic Growth in Nigeria. *Innovare Journal of Social Sciences, 2*(4), 1-6.

Ezike J.E & Ogege S (2012) Nigerian Foreign Trade Policy: Its impact on non-oil exports. *Journal of Economics and International Finance*, *4*(8), 192-200.

Ikpe, M.; Ojike, R. O.& Ahamba, K. O. (2020). Does Trade Liberalisation Policy Enhance Performance of Non-Oil Export Trade in Nigeria? *Foreign Trade Review,54*(1), 1–15.

Kowalski, P. (2017). Impact of Changes in Tariffs on Developing Countries Government Revenue. Available on https://www.gtap.agecon.purdue.edu/resource/download/215.pdf.

Li, C., He, C., & Lin, C. (2018). Economic Impacts of the Possible China–US Trade war. *Journal of emerging Markets Finance and Trade*, *54*(7), 1125-1139.

Obi-Egbedi, O., Okoruwa, V. O., Aminu, A., & Yusuf, S. (2012). Effect of Rice Trade Policy on household welfare in Nigeria. *European Journal of Business and Management, 4*(8), 160-170.

Okere, K. & Iheanacho, E. (2016). The Impact of Trade Protectionist Policy on the Economic growth of Nigeria. *International Journal of Finance and Accounting*, *5*(4), 171-183.

Oladapo, O. T. (2010). What exactly is Active Management of Third Stage of Labour? *Acta Obstetricia Gynecological Scandinavica*. *89*, 4–6.

Osa, I. G. (2014). The Impact of Trade Libralization on Nigeria Manufacturing Sector: Empirical evidence. *European Journal of Business and Management, 6*(27), 46-59.

Yasiru, O. A. (2017). Globalization and non-oil export Performance in Nigeria: A bound cointegration approach, *EUROECONOMICA*, *36*(2), 44-54.