

The changing dimensions of tariff and imports in Nigeria

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Abstract

The objective of this paper is to empirically investigate the effect of Tariff on Imports in Nigeria between 1981- 2016. Based on data from secondary sources, Augmented Dickey-Fuller Unit root test was employed to examine the order of integration of each of the variables while the Bound test Approach was used to test for a long-run relationship. The result of the analysis revealed that all the variables were stationary at first difference except tariff, which gave reason to the estimation of the ARDL (Autoregressive Distributed Lag) model. The Bound test shows there is a long-run relationship in the model. Furthermore, evidence from the estimated long-run and short-run ARDL regression results also showed that tariff had an insignificant negative effect on total imports in the short-run while the degree of openness and exchange rate exerted insignificant positive effects on total imports. Again, the income level proxy by Gross Domestic Product generated significant positive effects on total imports during the sampled period. Based on these findings, this study recommends that the government should enforce fiscal discipline especially in relation to tax administration so as to block leakages in revenue collection, strengthen the enforce of custom and excise duties. Again, tariff policy should be based on those goods Nigeria has higher comparative advantage in producing not the one with less comparative advantage in production.

Keywords: imports, tariff and international trade

1. Introduction

Advocates of free-trade argument belief that open markets based on comparative cost advantage and specialization will guarantee a most efficient use of global resources. This argument had attracted myriad of scholarly views in recent years. This is so because the international trade policy has gone through a quiet but fundamental revolution in which new approach has evolved and in some cases, supplanted the traditional augments. Like Carbaugh (2010:123) noted, when forming an international trade policy, a government must decide where to locate along the spectrum of autarky (protectionism) and free trade (trade liberalization).

One way of measuring how the government (policy maker) moves along the above spectrum is how she uses the scale of tariff. A tariff is simply a tax (duty) levied on a product when it crosses national boundaries. The most widespread tariff is the import, which is a tax levied on an imported product. A less common tariff is an export tariff which defines tax imposed on exported product. Export tariffs have often been used by developing nations, Carbaugh (2010:123). Tariff serves as a veritable tool of managing the economy. It can be to achieve macroeconomic goal of economic growth. This is particular true as it discourage the consumption of some harmful commodities such as cigarettes and alcohol among others. This had necessitated the imposition of import tariff on certain commodities.

Contrary to the above expectations, Nigeria's huge dependence on imports has being and is still a major concern for government and key stakeholders in the country especially, those who produce similar or competing goods to the imported goods. Policies have been made in other to reduce the quantity of these imports through tariffs. The complex nature of managing tariff related policies could be seen as bottlenecks in the administrative sector and poor implementation procedure among others. Due to this

complexity, most times tariffs are hardly remitted to the appropriate authorities. Available statistics shows that the worst of it all is that Nigerian imports have been increasing during the years together with tariff. The quantity of imports in Nigeria as at 2014 are 23% of capital goods, 27% of supplies, 17% of food and beverages, 14% of lubricants and fuel, 7% of consumable goods and transportation, all of which 34% is shipped from Europe, 43% are imported from Asia, 15% imported from America while about 7% are imported from neighboring Africa countries (Trading Economics, 2016). Trading Economics (2016) also made known that the average amount of import in Nigeria amounted to N164266.67millions between the year 1981 to 2015, reaching its maximum in 2011 which is N164266.67millions and lowest in 1984 with an amount of N167.88million.

In order to redress the above economic quagmire, various governments in Nigeria has implemented different policies to solve this problem ranging from Structural Adjustment Programme (SAP), Import substitution Strategy, Export-Led Substitution and more. The Structural Adjustment Programme (SAP) and its twin; trade liberalization policy is another case of the so called "SAP syndrome" that has led to the removal of tariffs on some agricultural commodities. Import substitution commodities have been on the increase in their importation at the expense of strategic import. Nigeria has spent approximately N1.6 trillion in the importation of "boiler", machinery appliances, mineral products of about N1.3 trillion, vehicles of over N600 billion, associated parts and aircrafts all in 2015(National Bureau of Statistics, 2016).

From the above observations, one might hastily conclude that Nigeria's import has been on the increase in the past years. Normally, tariff is expected to reduce importation and increase exportation but the reverse is the case in Nigeria.

Thus, the basic questions this paper intend to answer are: Do tariffs impact on imports in Nigeria? What roles do tariffs play in Nigeria's import trade? Aside this introduction, the rest of the paper is structured into four sections. Section 2 is the literature review while section 3 focus on materials and methods. Sections 4 and 5 dwell on results and discussions as well as concluding remarks.

2. Related Literature Review

A lot of scholarly papers have been written in previous years with respect to the effect of tariffs on imports in several countries. The divide in economic literature harps on diverse theoretical foundations. We look at each of them in the next section beginning with theoretical underpinnings.

2.1 Review of Theoretical Literature

(a) Stock Adjustment Import Exchange Model

The pioneer of this model is Hemphill (1974) and was later modified by Moran (1989). This model made its assumption that the major aim of tariff is minimizing the discrepancies costs that exist between desires and actual degree or levels of international and imports reserves that are constantly proxy with the quadratic cost functions. This model equally clarifies that under level conditions, the desired or the short run import volume would equal the foreign exchange volume in the long run.

Based on these assumptions, those who are followers of this theory are of the view that international reserves are used to adjust or finance the differences that exist between receipts and imports and not to make payments for imports. Based on this believe, over time, International reserves has been used to bring the level of import to a state of equilibrium. This model is argued to have a micro foundation and a good example for micro foundation because it relies on the consumers theory of demand, that the main objective of a consumer it's the maximization of satisfaction.

Therefore, in order to achieve full and maximum satisfaction, consumers allocate incomes among the needed and commodities in competition. In theory the above arguments is applicable to the demand of import; that is, the demand for import by the consumers is highly dependent and affected by the consumers income level, prices of import, and the prices of substitute goods or related and needed or necessary commodities. Therefore the sum total of demand for import by consumers consists of the aggregate imports for the economy of the countries. The disadvantage of this model is the inability of it to list ways of decreasing the cost of importation.

(b) Centre-Periphery Model

Milton Friedman (1966) pioneered this model. The model explains the disequilibrium of the economic growth in developed and industrialized countries and the underdeveloped and developing countries. A lot of explanations have evolved from this discourse. One of such is the work of Myrdal (1963). Myrdal (1963) used cumulative causation and circular process in trying to explain the diverging and increasing international differences in the development level from the original conditions that are identical between the said nations. He posits amongst others that the developed nations, for years, in the aspect of manufacturing, have successfully gained a trade advantage which is cumulatively competitive. Therefore, the reformation in the economy would have a

positive impact on the people and the society through significant factors.

This model is said to have the setback of ignoring internal factors that cause underdevelopment in Less Developed Countries (LDC) with more focus on external factors.

(c) The Prebisch Model

This model owes its existence to Prebisch (1950). He made the assumption of 2 countries and 2 commodities whereby the developed nations on the base that its income elasticity is higher than one so the developed nations produce and export goods, whereas the underdeveloped countries produce and exports raw primary material on the base that its income elasticity of demand is less than one.

This model is also based on the assumption that the previous rates of income for the two bilateral countries are the same. Given the rate of export and imports growth in the underdeveloped and developed nations, in developing countries imports increases spontaneously, developing countries like Nigeria, growth cannot be achieved unless the external sector finances the negative increasing balance of payments on the current account through capital flows.

Therefore, there must be a series of adjustment to increase the rate of growth of exports and reduce imports rate in other to achieve equilibrium. The rate of economic growth would be fixed at a point lower than the rate of economic growth of nations that are developed. In this situation, the gap, both in absolute and relative terms, between the developing and developed nations, according to economic expectations will increase more. This situation provided above can only hold if the equilibrium of current account on balance of payments remains the conditions for international trade and it goes off due to the mechanism of adjustment in rectifying the balance of payments disequilibrium (see Thirlwall; 1999 and Okoh, 2004). The major setback of this model it's the advocacy for the removal of tariff which tends to discourage government's efforts to meet macroeconomic goals due to reduction in the revenue base.

(d) The Simple Import Demand Model (SIDM)

The founders of this model are Khan (1974), Nurnsimhan and Pritchatt (1993), Thirlwell (1999), and Shehu and Aliyu (2007). This model enacted from their research work. The model specifies a linear relationship between imports and its determinants.

Thus, $MTD=f(z)$. Where, MTD =total imports demand
 Z =vector of imports determinants, f =functional symbol.

The determinants of imports include foreign reserve, income and exchange rate, index of openness, import capacity and possible economic policy.

Foreign exchange component was added to the model based on the justification that many underdeveloped economies lack foreign exchange that it is now appropriate to add it in their functions of import demand as a factor of their import services and goods capabilities from the countries that are developed. (See Kamolafe, 1995; Jerome and Adanikinju, 1995; Jerome and Adanikinju, 1995; Uwert, 1997). However, this model is criticized because it doesn't give detail explanation of the policy drivers of import as it concerns Less Developed Countries (LDC).

2.2 Review of Empirical Literature

There are latitudes of empirical literature with respect to the effect of tariff on imports. Most of these studies include

Isakova, Koczan and Plekhanov (2013), Genc and Artar (2014) ^[16], Thursby and Thursby (1984) ^[45] are based on cross sectional while others, especially Serletis and Allen (2009), Mwega (1993) ^[33] and Aliyu (2001) amongst others are country-specific. These works are summarized below

Isakova, Koczan and Plekhanov (2013) empirically looked at the effect of customs union formation for Belarus, Russia. Kazakhstan due to the pending alterations in importation timing on the import framework on the three countries. The result of the estimation of the multivariate model shows that the creation of trade has an insignificant effect, not in the trade between developing countries and Russia, in which Russian decreases tariffs. Though, an increase in tariffs is noticed to have brought about an increase diversification in trade, with emphasized bad effect on imports between Kazakhstan and China and also a pronounced positive effect on imports within Kazakhstan and custom union. The study went further to recommend that the new policies on tariff have not been maximized by member countries sufficiently.

Serletis and Allen (2009) look at the exportation of agricultural products from US to India between the time frame of 2003 to 2008 relying on inferential and descriptive statistics. Though, it was discovered that high agricultural tariff program of India are significant bottlenecks to agricultural export of US. This is a sign that aggregate intervention by the government of India in the agricultural sector comprising of restrictive measures is naturally geared towards protecting domestic producers given her self-sufficiency in the production.

Choudhri and Hakura (2012) ^[10] investigate the link between exchange rate and imports in the United State of America with the main targeting on exchange rate which was exceeded by the importation and exportation prices. They found that policies which are concern with exchange rates have effects on different countries international trade closely. They concluded that a weak dollar, by devaluation is helpful in boosting the competitive advantage.

Genc and Artar (2014) ^[16] empirically analyzed and investigate between the time period of 1985 to 2012, the effect of exchange rates on importation and exportation of developing countries. The analysis made use of panel cointegration, and the data was extracted from World Bank. It shows that in the long run there is a mutual relationship between exportation-importation of developing countries and exchange rates.

Mwega (1993) ^[33] in Kenya analyzed the dynamic import function using error correction model in the short run. The paper continued by emphasizing that exchange rate policies will not encourage great improvement in the disequilibrium externally, and foreign reserves remain the main determinant of import.

Tang and Nair (2002) analyzed the import demand function of the economy of Malaysia economy with the aid of the aid of the bounds test method in order for economic co-integrate import demand, income and relative price. In conclusion they were of the view that cointegration exist between the parameters and the study had to present a long run income elasticity of 1.5 percent and relative price elasticity of 1.3 percent.

Thursby and Thursby (1984) ^[45] analyzed the alternative specifications appropriateness with a sample of five countries which are Canada, United Kingdom, Germany United States of America and Japan, as a case study. Nine models were used three hundred and twenty four alternative

specifications were developed from total demand for imports. It was concluded that no functional form is universally appropriate in all the countries. It is also observed that all the nations that were mentioned used logarithmic specification except Canada. This conforms to a research work by Khan and Rose (1977) for United States of America, Japan and Canada that logarithm functional form is the best appropriate model for import aggregate demand model and its determinant.

In Nigeria, Olayide (1968) ^[35] made use of time series of annual data of import with 16 observations ranging from 1948-1964. The paper made use of multiple regression analysis, the result shows that effective income, terms of trade, and index of the trade restriction are better parameters estimation means.

Ajayi (1975) ^[1] made use of data sourced from (1960 to 1970) of Nigeria's import. He concluded that effective income, relative prices and foreign exchange are the main determining factor in estimation of the total or aggregate importation.

Ozo-Esan (1984) carried out an analysis on the main determining factors on importation in Nigeria with the support of the monetarist import demand. An experimental result from this study shows that the money supply in Nigeria and relative prices greatly determines the demand for import while the coefficient of the real income was not significant statistically. The result shows that there is disequilibrium in the money market which affects total imports directly. Therefore, any decrease in the supply of money will bring about a decrease in total imports.

Aliyu (2001) shows the effect of real income, effective exchange rate, foreign reserves levels, capacity of import and some non –influential variable such as preferences and taste on the import demands level using three non-aggregated import demand models for the economy of Nigeria ranging from 1970-1998, the coefficient of the non-dependent variable through a dynamic specification of the models with the help of values of the logarithmic variable shows that the respective coefficients of the variables are elastic. The result indicates that error correction mechanism and income are elastic only whereas effective exchange rate, effective foreign reserve, non-influential variable and effective capacity of import are inelastic.

Yekini (1999) ^[46] found that lending rate, exchange rate, GDP and capacity to import are also better determining factors in the demand for import in the economy of Nigeria. In the basics of the disaggregate form, imports are split into three forms, which are: raw materials import, capital goods import and finally the consumer goods import. The result from the regression analysis of the main component s of import shows that raw materials import has significant effect on the earnings of foreign exchange, relative prices and output of the industrial sector using the error correction mechanism. The capital goods import and the other sub variables of import were very sensitive to the relative prices dynamics. Import of consumer goods, the final import demand components, are determined basically through the availability of foreign exchange.

Arogunade, Obalade and Ogumakin (2015) ^[3] analyzed the impact of tariff on the growth of Nigeria's industrial using by employing or using the OLS (Ordinary Least Square) method. The regression analysis showed the presence of a positive impact of tariff on the growth of the industrial sector in Nigeria and interest rate showed a negative effect

on manufacturing sector in Nigeria. The paper was concluded throwing more light on interest rate; that higher interest rate is responsible for manufacturing sectors inefficiency in Nigeria.

3. Materials and Methods

3.1 Explanation of the Variables in the Model

(e) Import (IMP): Imports could be defined as the total value of services/ goods brought into a country, especially across a national border, usually from an external source. It signifies the outflow of currency from the economy of a country, this is because they are payments made by local companies to foreign companies. A high level of imports shows that an economy has a high domestic demand which is an indicator of economic growth. In this paper, it is measured in billions of naira and serve as the dependent variable. The data were sourced from Central Bank of Nigeria Statistical bulletin (various issues).

(b) Tariffs (TRF): TRF is known to be customs duty. It is a form of tax imposed on imported goods from a different nation. This study makes use of aggregate tariff. It is expected that tariff and import has an inverse relationship. The data were sourced from Central Bank of Nigeria Statistical bulletin (various issues).

(c) Exchange Rate (EXR): Exchange rate refers to the price of a county’s currency with respect to another country’s currency. In view of this paper, a strong domestic currency encourages importation but discourages exportation, it does this by making importation cheap. The data were sourced from Central Bank of Nigeria Statistical bulletin (various issues). The economic apriori is that an appreciation in the exchange rate of the naira would reduce importation.

(d) Index of Openness (IOP): This is the level of the economic dependence of a country in both international trade and financial flow. Thus, the principle of openness index states that the higher the index the greater the incidence of trade on domestic activity and the stronger the country’s income. Here, it is calculated as export plus import divided by GDP. The economic apriori is that increase in openness will lead to increase in import (positive relationship). The data were sourced from Central Bank of Nigeria Statistical bulletin (various issues).

Gross Domestic Product (GDP)

The GDP is in this context could be seen as the market

value of final services and goods that is available in a country for a year. This is a proxy for national income an indicator of economic development. Therefore, an increase in GDP is expected to bring about an increase in Imports. The data were sourced from Central Bank of Nigeria Statistical bulletin (various issues).

3.2 Analytical Framework

According to Learner and Stem (1970), there is no specified method for selecting functional relationship for model specification. The model is normally influenced by the theoretical insight taken as long as the choice is not harmful to the result obtained. Therefore, based on the literature reviewed, this paper adopts a combination of Prebisch (1960) and Simple import demand models. Thus, the functional relationship between the variables are expressed as:

$$IMP = f(TRF, EXR, GDP) \quad (1)$$

Where all the variables are as earlier defined. However, this study further modify equation (1) in-line with the explanation of Olayide (1968) and also extends the scope of from 1981 to 2016. Accordingly, the functional relationship between the variables is stated as:

$$IMP = f(TRF, EXR, IOP, GDP) \quad (2)$$

The econometric form of equation (2) is thus expressed as:

$$IMP_t = a_0 + a_1 TRF_t + a_2 EXR_t + a_3 IOP_t + a_4 GDP_t + b_1 IMP_{t-1} + b_2 TRF_{t-1} + b_3 IOP_{t-1} + b_4 GDP_{t-1} + U_t \quad (3)$$

Where, all the variables are as earlier defined. Again, a_0 = Constant term, a_i are parameters of the explanatory variables and b_i are parameters of long-run explanatory variables

4. Results and Discussion

The analysis of the results are done in five phases. First was the descriptive statistics to show the characteristics of the data. Phases two and three centered on Unit root and ARDL cointegration test. Thereafter, phase four dwell on long-run and short-run dynamics while the post-estimations were conducted in phase five.

4.1 Descriptive Statistics Test

The descriptive statistics is summarized in Table 1. It shows that, IMP has the highest mean implying that on the average, FDI inflow was the highest between 1981 and 2016.

Table 1: Summary of Descriptive Statistics Test Result for the variables

	Imp (n billion)	Gdp (n billion)	Exr (\$ us bill)	Iop (\$ us bill)	Tariff (\$ usbill)
Mean	2.75	24756	67.23	51.11	17.31
Median	1.38	2120	88.9	53.03	9.90
Maximum	9.08	3852	113.2	81.81	198.23
Minimum	3.53	173011.9	0.74	21.12	0.00

Source: Authors’ Computation Using Eviews 9

Again, Table 1 shows that GDP appeared with a positive mean inflow between 1981 and 2016. The mean of EXR was also higher than the mean of IOP and TARIFF. Secondly, GDP had a maximum value that was higher than that of IMP and TARIFF throughout the period of study.

TARIFF recorded the lowest minimum value, when compared with EXR and IOP throughout the period of study. The dispersions in the trend of the data suggest the presence of unit root. This observation amongst others called for stationarity test.

4.2 Unit Root Test

From the result presented in Table 2, all the variables were not stationary at level except Tariff. This informed the first difference test, I(1) for unit root. The first difference, I(1)

test shows that the variables were stationary and integrated of order one, I (1). This necessitates further analysis of the long- run relationship between the variables in the model.

Table 2: ADF Test Results for the Variables

Level				
	ADF Test Statistics	5% Test Critical Values	Decision	Order of Integration
Limp	0.81	-2.94	Not Stationary	I (0)
Lgdp	0.170	-2.94	Not Stationary	I (0)
Lexr	-1.61	-2.94	Not Stationary	I (0)
Iop	-1.91	-2.95	NOT Stationary	I (0)
Tariff	-5.83*	-2.94	Stationary	I (0)
First difference				
	ADF Test Statistics	5% Test Critical Values	Decision	Order of Integration
Limp	-5.33*	-2.95	Stationary	I (1)
Lgdp	-4.34*	-2.95	Stationary	I (1)
Lexr	-6.91*	-2.95	Stationary	I (1)
Iop	-7.99*	-2.95	Stationary	I (1)

Source: Authors' Computation Using Eviews 9

4.3 Cointegration Test Result

The most appropriate cointegration test for series that are of different order of integration is the one proposed by Pesaran, Shin and Smith (2001) commonly referred to as Bounds cointegration test. It is based on the F-statistic (Wald test). The F-statistic and critical bounds values for testing the null cointegrating relationship between the

variables are presented in Table 3. Based on the results, the calculated F-statistic is greater than the 5% critical value bounds for the upper bound I(1) (i.e. 8.23>4.401). This implies that cointegration exist in the model. That is, there is long-run relationship between the time series variables. The study therefore proceeded to estimate the both ARDL long run and short run dynamics.

Table 3: ARDL Bounds Test Result for the Import model

Computed F-statistic	5% Lower Critical Value Bound [I(0)]	5% Upper Critical Value Bound [I(1)]
8.23	2.86	4.01

Source: Authors' Computation using Eviews 9

4.4 Long-run and Short- run Dynamics

The results of the long-run and short-run coefficients are reported in Table 4. The result indicates that the relationship between Gross Domestic Product and Import: the coefficient of foreign direct investment for a current year is approximately 3.05. This shows that gross domestic product had a positive relationship with import. A unit increase in gross domestic product for a current year led to approximately N 3.05 million increase in import in Nigeria between 1981 and 2016. The probability statistics of 0.00 is less than 0.05. This implies that GDP is significant in the short run. Next, the coefficient of one-year lag of Gross Domestic Product is approximately -1.82. This shows that one-year lag GDP had a negative relationship with import. A unit increase in one-year lag of Gross Domestic Product led to approximately N 1.82 Billion decrease in import output in Nigeria between 1981 and 2016. The probability statistics of 0.11 is greater than 0.05. We therefore conclude that one-year lag of gross domestic product had a negative but insignificant relationship with import.

Again, Table 4 indicates that the relationship between Exchange rate and import: the coefficient of exchange rate is 0.11. This shows that exchange rate had a positive relationship with import. A unit increase in exchange rate for a current year led to N0.00 Billion increase in import in Nigeria between 1981 and 2016. The probability statistics of 0.442 is greater than 0.05. We therefore conclude that exchange rate for a current year had a positive but

insignificant relationship with import.

Furthermore, Table 4 shows the relationship between Trade openness and import. A close look at the analysis reveals that the coefficient of trade openness for a current year is approximately 0.00. This shows that trade openness had a positive relationship with import. A unit increase in trade openness for a current year led to approximately N 0.00 million increase in import in Nigeria between 1981 and 2016. The probability statistics of 0.44 is greater than 0.05. We therefore conclude that trade openness for a current year had a positive but insignificant relationship with import. Next, the coefficient of one-year lag of trade openness is approximately -0.00. This shows that one-year lag of trade openness had a negative relationship with import. A unit increase in one-year lag of trade openness led to approximately N 0.00 Billion decrease in import in Nigeria between 1981 and 2016. The probability statistics of 0.00 is less than 0.05. We therefore conclude that one-year lag of trade openness had a negative but insignificant relationship with import.

Table 4 equally indicates that Tariff had negative relationship with import but at the current and lag year, and both are insignificant. On the other hand, the coefficient of the error correction term (i.e. -1.20) has the expected negative sign. The magnitude of the coefficient implies that the short run disequilibrium in the system can be reconciled at the speed of 120 percent, and it is significant at 5% level of significance.

Table 4: ARDL Test for the Import Model

Panel A: Short Run Dynamics		
Variable	Coefficient	Probability
D(LIMP(-1))	0.55	0.029
D(LIMP(-2))	0.80	0.0016
D(LIMP(-3))	0.50	0.0049
D(LGDP)	3.05	0.0013
D(GDP(-1))	-1.82	0.110
D(LGDP(-2))	-0.88	0.213
D(LEXR)	0.11	0.422
D(LEXR(-1))	-0.46	0.013
D(IOP)	0.00	0.44
D(IOP(-1))	-0.00	0.00
D(TARIFF)	-0.00	0.39
D(TARIFF(-1))	-0.00	0.431
CointEq(-1)	-1.200	0.00
Panel B: Long Run		
Variable	Coefficient	Probability
LGDP	3.34	0.00
LEXR	0.11	0.017
LOP	0.00	0.52
TARIFF	0.00	0.44
C	-18.63	0.00

Source: Authors' Computation using Eviews 9

Table 4 also reports the long-run result for the model. The result indicates that tariff appear with the hypothesized positive signs but do not significantly affects import in the long-run. Simply put, tariff is found to have an insignificant and positive effect on import in Nigeria during the period of 1981 to 2016. The policy implication of this finding is that the changing dimension of tariff policy in Nigeria has not been broadly focused, hence, limits its impact on import. The result of the analysis validates the postulations of Isakova, Koczan and Plekhanov (2013) that that the gains accruable to countries from new tariff policy per se are limited at best.

Again, the index of trade openness exerts an insignificant positive effect on total imports both in the short run and long run. This conforms to economic a priori criteria, but deviated from the statistical expectation of the model. This would result that the so called liberalization policy of the past governments in Nigeria has not meaningfully translated into inflow resources to Nigerian economy. This means the trade liberalization of 1986 has not created much impact in Nigeria.

Table 4 equally reports that exchange rate generated a positive effect both in the short run and long run in the model, but significant in the short run and insignificant the

long run. This is a mix result effect. The policy implication of this finding is that exchange rate in Nigeria is getting worst as the year goes by, our currency value should be taken a closer look at with respect to other countries. Comparing our currency of now to the 80's there is a lot of devaluation.

As shown in Table 4, income size proxied as GDP has a positive and significant impact on import both in the short run and long run. This could be channeled to the composition of total imports which comprises of both competing and non-competing imports. The non-competing imports mainly focus on capital goods; tend to grow as the economy expands. The policy implication in Nigerian economy is that it indicates the benefits of import substitution strategy in Nigeria. Therefore import substitution strategy should be encouraged by the government.

4.5 Post-Estimation Tests

Having analysed the estimated import model based on individual coefficients and joint coefficient, this paper deemed it is necessary to conduct some post-estimation tests. The results and analysis are done in Table 5.

Table 5: Post-Estimation Tests Result for the Import Model

Test	F-value	Prob.	Decision
Autocorrelation	-	>0.10	No problem of Autocorrelation
Serial Correlation	2.11	0.16	Residual not Serially Correlated
Heteroscedasticity	0.52	0.89	Homoscedasticity Confirmed

Source: Authors' Computation using E-Views 9

Table 5 above shows the various post estimation tests results for autocorrelation, serial correlation and heteroscedasticity. A close look at the figures show that the probabilities of the both the autocorrelation, partial autocorrelation, and Q-stat statistics are greater than 0.10 throughout the lags used. It is therefore fitting to state that there is seemingly absence of the problem of autocorrelation. Again, the f-statistic value and its probability statistics from the Breusch- Godfrey

serial correlation test are 2.11 and 0.52 respectively. This implies that the residuals of the estimated model are not serially correlated. More specifically, the f-statistic value and its probability statistics from the Breusch-Pagan-Godfrey heteroscedasticity show that the probability of the f-statistics value of 0.52 is 0.89. In sum, the estimated import model can amenable for policy recommendations.

5 Conclusion

In conclusion, the imposition of tariffs on goods that are imported into Nigeria has been described in literature as a measure used by countries to boost growth in industries considered to play major roles in economic development or to correct disequilibrium in the balance of payments position. The size of tariff has been a source of gap between price paid for a foreign good which is imported and local price for particular good that is produced domestically. This has necessitated efforts to analyze how tariff affects import of which this study is a part of it. Following the estimation approach of ARDL, it was observed that tariff decreases total imports while exchange rate, index of openness and gross domestic product increases aggregate imports in Nigeria during the sampled period of 1981- 2016. Based on these results, the paper concludes that tariff is a source of increase in the price of imports. The paper therefore recommends that the government should enforce fiscal discipline especially in relation to tax administration so as to block leakages in revenue collection, strengthen the enforce of custom and excise duties. Again, tariff policy should be based on those goods Nigeria has higher comparative advantage in producing not the one with less comparative advantage in production.

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