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Original Research Article

Impact of International Trade on Economic Growth: Evidence from Nigeria

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Abstract: The paper investigates the impact of international trade on economic growth in Nigeria from 2000Q1- 2020Q4. The choice of the period was informed by the economic recessions which the country experienced within the period. The paper employed an autoregressive distributed lag model (ARDL) and error correction model (ECM) to estimate the short run and long run relationships among the series. The findings of the paper reveal that exports demand has significant and positive short run and long run relationship with economic growth, while imports demand and exchange rate volatility have short run and long run negative relationships with economic growth in Nigeria during the study period. The paper recommend that Nigerian government should intensify efforts towards expanding the country's export based in order to improve its external competitiveness for the enhancement of the aggregate external demand and foreign exchange earnings that will mitigate the adverse effect of exchange rate volatility. By expanding the exports based, the country will likely reduce its import demand particularly in consumer goods thereby saving millions of dollars to boost the nation's reserve which will attract more foreign investors that will boost the country's economic activities to achieve higher and inclusive economic growth in the country.

Keywords: ARDL, Export Demand, Import Demand, Exchange Rate Volatility and Growth.
JEL Classification: B17, B27 and F43

1.0 INTRODUCTION

International trade depicts the economic activities or transactions that occur among countries. The sector can either be in equilibrium or disequilibrium (surplus or deficit). Either the sector is in equilibrium or it is in disequilibrium (surplus or deficit). When a country's receipts are insufficient to cover its expenditures, it is said to be in deficit, and when receipts exceed payments, it is said to be in surplus. A perfect trade is one that is consistent and stable across time. When exports and imports are equal, the exchange rate is steady, and external reserves are adequate, equilibrium is reached. Though, in a precise term, such a well-defined structure barely occurs (CBN 2013). A robust external trade is vital for the growth of every open economy. This is because the external trade is a measure of the bunch of economic activities and as it replicates the country's international trade position. An economy with a stable growth in output would be a growing economy. Thus, economic growth is usually seen as a necessary state for advanced and developing nations.

Exchange rate therefore plays and important role in global or international trade, as it

serves as the medium through which the trading countries exchange goods for goods. In other world, it refers to the degree at which local denominations exchange for foreign currency. It is a significant macroeconomic fundamental as its fluctuation or volatility impacts on operation of other economic fundamentals in any nation (Odili, 2015). Its value can be used to assess overall performance of an economy. It is therefore, a very vital variable in decision making process in a country. Local investors are not certain of their investments because of high rate of volatility in exchange rate, which is one of the factors that determine the external economic activities of a given nation (Oloba and Abogan 2013 and Shehu 2008. In view of this, many emerging nations are making significant attempts to build their industrial bases, leveraging their foreign exchange markets to allow domestic investors to purchase essential machinery, equipment, and raw materials for industrial consumption (Abba, 2009). The supporters of the exchange rate regime believe that while sustaining a pegged exchange rates is problematic, maintaining a stable exchange rate, coupled with macroeconomic stability, improves external trade and other economic activities, which boosts growth (Morina, Hysa, Ergün, Panait, and Voica 2020).

International trade has a significant role in economic development. Foreign flows were seen as the principal conduit of growth by classical and neoclassical economists since it was so important in a nation's development. International trade has had a significant impact on globalization in recent decades. International trade is the oldest and most important component of a country's foreign economic links. It is extremely important and influential in the development of a modern global economy. Its effect on country's growth and development has grown greatly throughout time, and it has made a considerable contribution to the evolution of the global economy. Economic growth is a major concern in the global economy because it is a prerequisite for rapid progress. For many years, the literature has focused on the relationship between exchange rates, international trade, and economic growth. Import demand is stimulated by development, and exchange rate volatility affects economic growth (Iyoha and Okim, 2017).

Therefore, an appreciation of the local currency can unfavourably affect the competitiveness of Nigeria's exports in the international market in the short run, while the devaluation will have positive impacts and expand exports in the long run. However, advocates of flexible exchange rate regime disagree with the above claim and maintain that exchange rate risk can be fudged systematically and allows international trade flows without being affected (Odili 2015).

Mckenzie (2009) found that developing countries, especially those in sub-Saharan Africa, have experienced large fluctuations in exchange rates in modern times. In Nigeria, existing evidences have portrayed how exchange rate oscillated overtime, more particularly, since the introduction of trade liberalization. In response to the adverse effects of exchange rate instability on import and economic growth in Nigerian, the government through the Central Bank of Nigeria has taken an energetic step in the foreign exchange market through various interventions to limit the unwanted impacts of exchange rate volatility on economy (Odili 2015).

Therefore, the import trade in Nigeria reflected the system of different policies that have been applied over time. Persistent problems of exchange rate instability due to the drop in the price of crude oil and the associated economic recession heralded the introduction of the Structural Adjustment Program (SAP) in 1986. As a result, trade and exchange policies were liberalized, allowing exchange rates to be determined by market forces (demand and supply for forex). It should be noted that the fluctuations of the nominal and real exchange rates in a flexible exchange rate system is much higher than the volatility in the fixed system (Odili 2015, cited from Crosby, 2000; and Craighead, 2009). Many empirical papers extensively examined the export constituent of international trade with little attention to import aspect. The import segment is also a significant component, as economic theory holds that a nation's gross domestic product is a significant import element. Thus, evidence from the import side can not only help a country determine domestic productivity but take important measures that will revert the economy on the path growth (Odejimi, Isikhuemen and Edogiawerie 2020). It is as a result of this uneven development, that this paper seeks to investigate impact of international trade growth in Nigeria from 2000 to 2020. This period was chosen because of the two economic recession the county experienced, namely 2008 global financial crisis, 2016 recession which have affected the nation's growth. The contribution of this work is that empirical studies on external trade on economic growth in Nigeria has not been given much attention, hence the need to undertake study of this nature. Also, to the best of our knowledge, this is the first paper to look at the impacts of international trade on economic growth, with specific focus on export demand, import demand and exchange rate volatility Using Autoregressive Distributed Lag Model, particularly in Nigeria.

The paper, therefore, is organised as follows: In section one, we present the introduction, section two the literature review (theoretical end empirical reviews) and while section three represents the methodology. Finally, sections four and five represent the estimation result and conclusion and policy recommendation respectively.

2.0 LITERATURE REVIEW

This section reviewed the related theories and empirical papers written by scholars on exchange rate, international trade, and economic growth

2.1 Theoretical Literature

There are many theories that tried to connect economic growth and the components of the external sector particularly, export demand, import demand and exchange rate. However, this study reviewed only the balance of payment constraint growth theory.

Balance of Payment Model

This model asserts that a nation's growth rate is limited by balance of payment, because the economic growth rate cannot exceed the rate which is in line with balance of payment or by and large in line with sustainable deficits of balance of payments. Thirlwall (1979) claimed that the growth rate of any nation cannot exceed the rate consistent with the current account balance of payments, unless it can finance the growing deficit, which is generally considered devastating. Therefore, specifically, the rationale behind this theory is that the functions ofexports along with the performance of imports determine economic growth in long run. The increase in foreign currency earnings from the exports of goods and services is the only justifiable means of financing increased import demand occasioned caused by increased economic activities. One of his main assumptions upon which this theory is based is that the trade balance and import balance common to domestic.

Buttressing this assumption, Ferreira and Canuto (2003) asserted that only export growth and improvement in import substitution in terms of investment as considered as key components of aggregate demand that have the capacity to improve economic growth of a nation as well as reduce external and balance of payment is limitations. improvement in investment. They conclude that a favourable balance of payments improves the capacity of an economic while sustaining an equilibrium balanced current account. However, this theory was repudiated because it ignored the fiscal gap, saving-investment gap and monetary consequences of balance of payment. Darku 2013 opined that the theory ignored the foreign exchange requirement of reserves level. One of the basis of this model is that, it describes the importance of Balance of Payment as an integral element international trade. Furthermore, the theory is important to this study as international trade determines position of balance of payment and exchange rate which have significant impact on economic growth of a nation.

2.2 Empirical Literature

This section focuses on the review of some empirical papers written by the previous researchers on international trade and economic growth with specific attention on exchange rate volatility, export demand, import demand and economic growth. While many studies that were reviewed in this paper, like Morina *et at.,* 2020, Bostan and Firtescu 2019, Thuy, V. N. T. and Thuy D. T. T. 2019, Yakub, Sani, Obiezue, and Aliyu (2019) and Ndou (2021) focused more on exchange rate volatility on other macroeconomic variables, except Odejimi, Isikhuemen and Edgeware 2020 that used combination of these three variables (exchange rate volatility, international trade and economic growth).

Specifically, the studies reviewed in this section include not only researches conducted for Nigerian economy alone, but even other countries especially within Africa. For instance, Ndou (2021) analyse the relationship between exchange rate and trade balances in South Africa from1970 to 2019 using ARDL. The result reveal that the long-term elasticity of the exchange rate on trade balance is greater than the short-term shock. From a short-term and long-term perspective, net trade balance is affected by domestic income, inflation and nominal effective exchange rate. This shows that the effect of domestic income is greater than the impact of the price level of and the exchange rate, the findings of this study was similar to that of Awokuse 2007 Abogan 2014, Alimi 2017 and Adesoye 2018.

Moreover, Morina *et at.,* (2020) examine the impact of real fluctuations in the effective exchange rate on the economic growth of the countries of Central and Eastern Europe. They used annual data from countries in 14 Central and Eastern Europe from 2002 to 2018. The results of the fixed effect estimation on panel data show that exchange rate fluctuations have a significant and negative impact on growth.

Odejimi, Isikhuemen and Edogiawerie (2020) exmine the impact of exchange rate variation and import demand on growth from 2003-2017, Using an ARDL, their result reveals the short-term and long-term relationship between changes in the exchange rate and Nigerian import demand. The results of the ECM reveal that there is a long-term

relationship between the variables. It further reveal that after the shock, about 7% of the adjustments based on each year will be corrected to long-term equilibrium, implying that the adjustment process is slow, the findings was in line with Aliyu 2007, Usman 2012, Akpan 2012 and Amini 2012.

In a study by Bostan and Firtescu (2019), employ annual data from 2007 to 2014 and the ordinary least squares (OLS) regression to examine the effects of the exchange rate on the competitiveness of Romania's international trade. They considered some variables as exogenous while others were endogenous. They concluded that the exchange rate is a significant factor in shaping competitiveness, but the effects of uncertainty on imports and exports are not similar as they appear to be weaker on imports.

Similarly, Thuy, V. N. T. and Thuy D. T. T. (2019) use quarterly data from 2000Q1 to 2014Q4 to study the impact of exchange rate fluctuations on Vietnam's exports. They applied Autoregressive Distribution Delay Limit (ARDL) test methods to analyse the horizontal relationship between fluctuations in the effective of exchange rate and exports. Using the export demand function, they also considered the impact of depreciation and foreign earnings on Vietnam's exports. The results show that, as expected, exchange rate fluctuations have a negative impact on the volume of exports in the long term of an economy. The depreciation of the national currency has a negative impact on exports in the short term. but it has a positive impact on exports in the long term, which is consistent with the effect of the J curve. Surprisingly, the increase in real foreign earnings of reduced Vietnam's exports.

Yakub, Sani, Obiezue, and Aliyu (2019) investigate the impact of exchange rate volatility on Nigeria's trade flows using monthly data series from 1997-2016. The GARCH model was employed to generate the series of nominal exchange rate fluctuations. The ARDL and granger causality tests were used to detect the long-term relationship and to determine the direction of the relationships, respectively. Their article indicates that exchange rate volatility had a negative negative impact on trade flows in Nigeria in the short term but with negative impact in the long run. Furthermore, research has shown that ignoring the exchange rate fluctuation can have a negative impact on Nigerian trade flows, especially in the short term, this goes in line with the findings of Okaduna 2014.

Kim (2017) employ Korean monthly data from 2000 to 2015 to examine the impact of the volatility of the USD / KRW exchange rate on the volume of maritime imports using an ARDL. The analysis show that the USD / KRW exchange rate volatility has a negative impact on the volume of Korea's maritime imports. Furthermore, the VECM indicates that the USD/KRW exchange rate has unidirectional causality on the volume of import and real income but, bidirectional causality between exchange rate volatility and real effective exchange rate in short run.

Furthermore, Asteriou, Masatci, and Pılbeam (2016) also use an ARDL and GARCH based volatility measurement to investigate the effects of exchange rate volatility on the international trade of Mexico, Indonesia, Nigeria, and Turkey. The results show that, except for Turkey, there is no long-term relationship between exchange rate volatility and international business activities in other countries, the extent of the volatility effect is relatively minimal. A significant causality was however found in short run between import/export demand for Mexico and Indonesia. There was a unidirectional causality between of export demand to volatility in Nigeria, however, there was no causality between import/export demand and exchange rate volatility in Turkey, this corresponds to the results of Lucas 1998, Mordi 2010 and Lawal 2017.

On the same vein, Bamidele, Olukayode, Oluwaseyi and Adelowokan (2018) investigate the effects of External Sector on Nigerian economy using time series date from 1980-2016. The authors employed VECM to analyse the dynamic long-run and short-run estimates. They found that, in the long run, about 10% of GDP growth in Nigeria was contributed by External sector, which was proxied by Exports, Imports and Exchange Rate. This suggests that government should focus more on non-oil sector to achieve higher economic growth, this could be done by improving on exports activities at a favourable exchange rate. Similar studies were conducted by Okadua 2013 and Nwanchukwu 2014 with same findings but using different methodologies.

Francis and Augustine (2019) study the effect of external sector aggregate on growth in Nigeria from 1980-2016 employing the combination of Correlation Analysis and Error Correction Model, the key proxies used in the study were Exports and Exchange rate. The study found a negative impact of exchange rate volatility on economic growth, while exports contributed positively to the economic growth of Nigeria. As such, there is serious need to promote exports trade in Nigeria by creating demand for the goods and services abroad which stimulates domestic production. Similar study was conducted by Akpan and Atan 2012 and found positive impact of both exchange rate and exports on economic growth.

Finally, a study conducted by Akidi, Boma, and Joseph in 2018, was carried out to empirically examine the effects of some selected external sector aggregates on economic growth in Nigeria calls the attention of many researchers. For the period under review (1981-2016), the study disaggregated the external sector to Exports, Import and Exchange rate and found the first variable to significantly affect economic growth in Nigeria while the last variables affect economic growth negatively. The findings of this study call for economically export-diversification policies and programmes that would aid in achieving the ultimate objective of the economy which is economic growth and development. Studies with similar findings with above include Olusanya 2013, Uwakaeme 2015, Tajudeen 2011, Olokoyo 2012 and Olida and Nurudeen 2010.

Chinwendu (2016) used an autoregressive distribution lag (ARDL) model to examine the relationships between external sector and macroeconomic stability in Nigeria from 1981 to 2016. The result showed that the shocks of external debt is positive and negligible to both inflation and economic growth in short run and long run. The result further reveals that the inability of some variable of the external sector to stimulate growthactivity in Nigeria and reveal the exclusive instance of under-utilized foreign funds. Moreover, effect of exchange rate is positive and significant in both sort run and long run. Also, the causal effects of foreign direct investment on economic growth is negative and negligible but, has a positive and significant effect on inflation, which further depicts the central role that FDI plays in promoting economic stability in Nigeria. The causal effect of FDI is negative and negligible on economic growth, but it has a positive and significant effect on inflation, suggesting the dominant role of FDI in promoting macroeconomic stability in Nigeria.

3.0 DATA AND METHODOLOGY

3.1 Data

Quarterly data on Real Effective Exchange Rate, Import Demand, Export Demand and Real Gross Domestic product of Nigeria are sourced from the Central Bank of Nigeria statistical bulletin and analyzed the impact of international On growth in Nigeria from 2000–2020. This period is chosen because of the two recission that the country witness during the study period.

Definition of Variables

Growth

This reflects a continues increase in real GDP (gross domestic product) over a period. In this study the growth rate of GDP (GDP) is used that denotes the economic growth of Nigeria.

Export Demand

Nominal exports demand is measured in US dollars and collected from Central Bank of Nigerian Statistical Bulletin.

Import Demand

Nominal imports demand is also measured in US dollars and collected from Central Bank of Nigerian Statistical Bulletin.

Exchange Rate Volatility

The exchange rate is represented in this paper by real effective exchange rate which is usually employ to measure the exchange rate volatility since the prices of goods and servicess is constantly changing and inflation is uneven, which causes variations in the nominal exchange rate to increase directly and affect the competitiveness of trade. This article therefore used the first transformation of the natural logarithm of the exchange rate as the volatility, as seen in the formulae below:

$$\alpha = \sqrt{\mu_t^2 + \mu_t^2}$$

3.3 Estimation Procedure

This study used Autoregressive distributed lag (ARDL) model and error correction model (ECM) to examine long run and short run the impacts of international trade on growth in Nigeria from 2000-2020. The dynamism of autoregressive distributed lag (ARDL) approach makes it must flexible for this paper. The approach combines endogenous and exogenous variables, which makes it more fit than the VAR model and others that are considered only for endogenous variables. Therefore, since this study is interested in the behaviour of endogenous versus exogenous variables, the adoption of this model is reasonably accepted. It is also a better alternative in a state where there could be an Engle and Granger structural collapse or the two-step process due to possible endogeneity. As stated by Pesaran and Shin (1998); The ARDL model of Pesaran, Shin and Smith (2001) can also be applied in situation where the fundamentals being studied are combinations of I (1) and I (0) in their order of integration, thus eliminating the possibility of an incorrect result. Unlike VAR, the lag length for the ARDL model must not be the same, which means that it must not have the same lag length. Also, with the Error Correction Model (ECM), there will not be a wrong regression problem because all the variables that go into the model are stationary and the ECM estimates their relationship both in the short and long term. These characteristics of the ARDL and the nature of the

study objective determined the decision to adopt the model for this analysis.

Therefore, the research starts with the functional form express below:

RGDPE = f (ERV, IMD, EXD) …… (1)

Where.

RGDPE= Real Gross Domestic Product

ERV= Exchange Rate Volatility

IMD = Import Demand

EXD = Export Demand

Presenting equation 1 in mathematical and econometric form by introducing the error term and then linearize by taken the natural log, we have equation 2

$lnRGDPE_t = \beta_1 lnERV_t + \beta_2 lnIMD + \beta_3 lnEXD + ln\varepsilon_t$ …….. (2)

Then, the generalize form of ARDL (p, q,) is given in equation 3 as:

$lnRGDPE_t = \rho_0 + \sum_{n=o}^{p} \alpha_n ln\Delta RGDPE_{t-n} + \sum_{j=1}^{q} \beta_j ln\Delta ERV_{t-j} + \sum_{n=o}^{p} \alpha_n lnI\Delta MD_{t-n} + \sum_{n=o}^{p} \alpha_n ln\Delta EXD_{t-n}\, ln\varepsilon_t$ …….. (3)

Where n=1,2, ……, p and j =1,2, ……, q

As ρ_0 is constant and α_n and β_j, are the constraints, $\varepsilon_t$is the error term

To perform the bounds test for co-integration, the conditional model is specified as Equation 4 as:

$\Delta lnRGDPE_t = \alpha lnRGDPE_{t-1} + \beta lnERV_{t-1} + \beta lnIMD_{t-1} + \beta lnEXD_{t-1} \sum_{n=o}^{p} \alpha_n ln\Delta RGDPE_{t-n} + \sum_{j=1}^{q} \beta_j ln\Delta IMD_{t-j} + \sum_{j=1}^{q} \beta_j ln\Delta EXMD_{t-j} + \sum_{j=1}^{q} \beta_j ln\Delta ERV_{t-j}\, ln\varepsilon_t$ …….. (3)

The null hypothesis indicates no long relationships (0) as indicated below:

$H_o = \alpha_n = \beta_j = 0$

$H_1 = \alpha_n = \beta_j \neq 0$

4.0 ESTIMATION AND RESULT ANALYSIS

4.1 Unit Root Test

The analysis starts with stationarity test, using both Schwarz and Hannan-Quinn Criterions, where all the series were subjected to unit root test. For both exchange rate and real gross domestic product, we reject the null hypothesis that the series have a unit root. In other word, the exchange rate volatility and real gross domestic product are stationary at level I(0), while for import demean and export demand we fail reject the null hypothesis that the series have unit root, therefore the two series became stationary after second difference and are regarded as integrated of order one I(1), hence, as shown on table 1 below, an ARDL bounds testing approach to cointegration and error correction mechanism are the more appropriate approach for such combination given that the approach allows for combination of I(1) and I(0).

Table 1: result of the Unit Root Test

	SIC		**SIC**		**HQ**		**HQ**	
Variable	I(0)	p-value	I(1)	p-value	I(0)	p-value	I(1)	p-value
RGDP	-3.392710	0.0141			-3.392710	0.0141		
IMP	-1.523313	0.5167	-10.92724	0.0001	-1.523313	0.5167	-10.92724	0.0001
EXD	-1.706987	0.4238	-7.891869	0.0000	-1.706987	0.4238	-6.544466	0.0000
ERV	-8.153089	0.0000			-8.153089	0.0000		

*Note: ***, ** and * denote 1%, 5% and 10% level of significance respectively. SIC and HQ Schwarz and Hannan-Quinn Criterions, I(0) and I(1) represent at level and first differenced respectively. Source: authors' computation using e-views version 12*

4.2 Bound Test

Given the sample size of 84 observations (2000Q1-2000Q4) employed in this paper. Pesaran *et al.,* (2021) two critical values of assessment were employed. ARDL-Bound test is presented in table 2 below. The result indicates that value of the F-Statistic lie above the lower and upper bound values from Pesaran *et al.,* (2001), at 1 percent level of significance suggesting that the null hypothesis of no long run relationship among the variables is rejected and therefore conclude that there exists a long run cointegration between economic growth, exchange rate volatility, export demand and import demand in Nigeria.

Table 2: Result of the Bound Test (Long run Cointegration Test)

F-statistics	**59.29253**		
Level of Significance	Lower Bound	Upper Bound	Decision
10%	2.37	3.2	rejected
5%	2.79	3.67	rejected
2.5%	315	4.08	rejected
1%	3.65	4.66	rejected

authors' computation using e-views version 12

4.3 ARDL Result

An Autoregressive distribution lag model was employed to investigate the impact of international trade on growth in Nigeria from first quarter of 2000 to fourth quarter of 2020 in Nigeria.

Interpretation of Sort Run and Long Run Result

As showed in table 3 below, the coefficient of the co-integrating equation is statistically significant at 1 percent, positive and less than one 0.498466, this suggest that over 0.49% of any deviation from equilibrium is correction in a period. The results further show the coefficient of log real gross domestic product is statistically significant in first and fourth lag periods and positive but insignificant in second and third lag periods. It implies that a 1% increase in log real gross domestic product of the first, third and fourth lagged periods brought about 0.12%, 0.07% and 83% increase in real gross domestic product of the current period respectively, while a 1% increase in real gross domestic products of the second lagged period brought about -0.11% decrease in real gross domestic product of the current period. The further implies that the passed values of growth domestic product statistically significant in explaining the present values of growth rate in Nigeria.

Also, the short run coefficient of export demand is positive 0.018266 and statistically significant at 5 percent and positive, which implies that a unit increase in the volume of export derives Nigerian towards growth by 0.018266 percent. While the long run coefficient is also positive and statistically significant at 10%. It also suggests that a unit increase in export of goods and services from Nigeria to other countries bring about 0.271394 percent increase in growth rate of the country. A lesson drown here is that the long run impact outweighs that of short run, probably is because the economy might have adjusted to all international trade policies and focuses towards maximizing the benefits in the tared. On the other hand, the short run and long run coefficients of import demand are -0.018849 and -0.018849 respectively. While the short run coefficient is statistically significant at 5 percent, the long run value is insignificant. With both coefficients being negative, it implies that in short run, a unit increase in import demand in Nigeria bring about -0.018849 percent decrease in growth rate in Nigeria, whereas, in long run the coefficient is statistically insignificant at 5 percent, a unit increase in import demand bring retards the economy by -0.018849 percent in long run. Given the nature of the country's import, this result is not surprising in that a large percentage of imported goods into Nigeria are consumer goods which do not add significant value to the nation's economy.

Table 3: ARDL Result

Dependent Variable: GDP				
Cointegrating form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_REALGDP(-1)	0.128952	0.066046	1.952459	0.0551
LOG_REALGDP(-2)	-0.110275	0.066321	-1.662743	0.1010
LOG_REALGDP(-3)	0.076322	0.069092	1.104650	0.2733
LOG_REALGDP(-4)	0.837695	0.066290	12.63688	0.0000
DLOGEPD	0.018266	0.006890	2.651111	0.0100
DLOGIMD	-0.018849	0.009343	-2.017375	0.0477
VOLATLITY_OF_REER	-0.000138	0.000222	-0.622694	0.5356
CointEq(-1)	0.498466	0.098192	5.076453	0.0000
Cointeq = LOG_REALGDP - (0.2714*LOGEPD -0.2801*LOGIMD -0.0021 *VOLATLITY_OF_REER + 7.4060)				
Long run coefficient				
DLOGEPD	0.271394	0.121556	2.232657	0.0289
DLOGIMD	-0.280050	0.203644	-1.375195	0.1737
VOLATLITY_OF_REER	-0.002057	0.003354	-0.613295	0.5418
C	7.405994	0.804584	9.204749	0.0000

authors' computation using e-views version 12

The coefficients of exchange rate volatility are negative and statistically insignificant at 5% percent in both short run and long run, signifying negative relationship in short run and long run. Although the coefficients and is statistically insignificant in both periods, it implies that in short run a unit increase in exchange rate volatility will bring about -.002 percent insignificant decrease in economic growth and vis versa in Nigeria. In long run, a unit increase in exchange rate will bring about -0.0001 percent decrease in economic growth in Nigeria and vis versa. This result further suggests

that exchange rate volatility whether positive or negative is not good for the economy as it tends to retard the growth of the economy in both short run and long run

4.4 Post Estimation Test

The post estimation test that are analysed here are serial correlation test, Ramsey Reset Test (mis-specification error), Breusch-Pagan-Godfrey Test for Heteroskedasticity and stability test.

4.4.1 Breusch-Godfrey Serial Correlation Lm Test

The paper estimated the serial Correlation LM test of Breusch-Godfrey to examine whether correlation exist in the error term as seen in the table below:

Table 4: Serial Correlation LM Test

F-statistic	0.024839	Prob. F(1,70)	0.8752
Obs*R-squared	0.027668	Prob. Chi-Square(1)	0.8679

authors' computation using e-views version 12

as shown in table four (4) above, the p-value of the F-Statistic is greater than 5% and the observed R-square is less than the p-value, hence we conclude that there is no serial correlation in the series.

4.4.2 Ramsey Regression for Misspecification of Error

To examine for specification error, the (RESET) was employed. Based on the result, we conclude that the model was correctly specified.

Table 5: RESET

	Value	**Degree of Freedom**	**p-value**
T-Statistic	0.855621	68	0.3952
F-Statistic	0.732087	(1, 68)	0.3952

authors' computation using e-views version 12

4.4.3 Heteroskedasticity Test

Heteroskedasticity test was employed to ensure consistency in the error term from one period to another as presented below:

Table 6: Breusch-Pagan-Godfrey Test for Heteroskedasticity

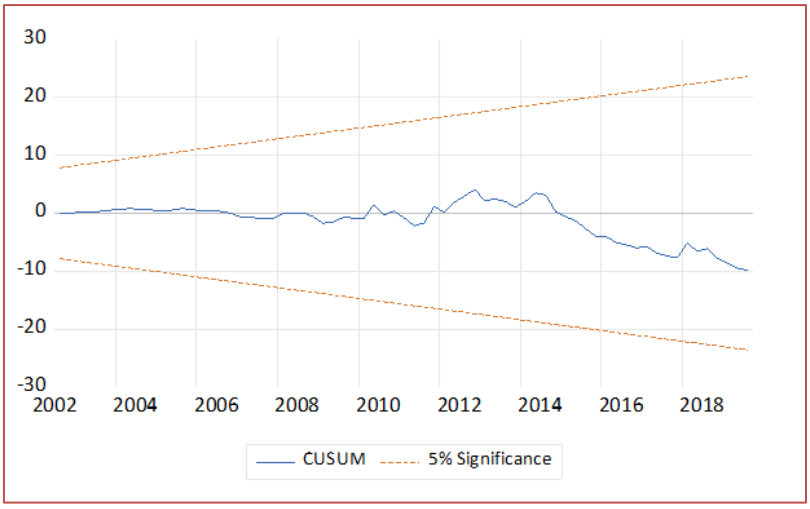
F-statistic	**1.148333**	**Prob. F(10,64)**	**0.3419**
Obs*R-squared	11.40980	Prob. Chi-Square(10)	0.3265
Scaled explained SS	7.747279	Prob. Chi-Square(10)	0.6535

authors' computation using e-views version 12

The result in table 6 above shows that the p-values of both F-statistic and observed R-squared are greater than 5%, indicating that the variance of the error term is constant overtime, hence the null hypothesis of hhomoscedasticity cannot be rejected.

4.4.4 Stability Test

CUSUM test was carried out to examine whether there is stability in the system during the study period



authors' computation using e-views version 12

Given that the trend line (blue line) is with the range as shown in the diagram above, the system is stable over the study period.

5.0 CONCLUSION AND RECOMMENDATION

CONCLUSION

This paper examined the impacts of international trade on growth in Nigeria. Given the behavioural patterns of the variables, the study employed the autoregressive distributed lag model for the estimation. The study found out that the first, second and fourth lags of real gross domestic products were statistically significant while the third lag was insignificant. The study also found an evidence of long run relationship between the variables. While the short run coefficients of export demand and import demand were all statistically significant, the coefficient of exchange rate volatility was insignificant. Furthermore, only export demand coefficient was statistically significant in long run with bot import demand and exchange rate volatility statistically insignificant.

Moreover, export demand has positive relationship with economic growth in both short run and long run while import demand and exchange rate volatility have negative short run and long run relationship with economic growth in Nigeria.

The paper recommend that Nigerian government should intensify efforts towards expanding the country's export based in order to improve its trade competitiveness for the enhancement of the aggregate external demand and foreign exchange earnings that will mitigate the adverse effect of exchange rate volatility. By expanding the exports based, the country will likely reduce its import demand particularly in consumer goods thereby saving millions of dollars to boost the nation's reserve which will attract more foreign investors that will boost the country's economic activities to achieve higher and inclusive economic growth in the country.

Disclaimer: The views expressed in this paper are those of the authors and do not necessarily reflect the opinions of the Central Bank of Nigeria.

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