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Does Exchange Rate Influence Nation's Gross Domestic Product? ARDL Approach

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Abstract:- The research tries to answer the question "Does exchange rate fluctuation influence the gross domestic product (GDP)" as measure of economic growth in Nigeria for duration of 33 years (1986-2018). The investigation explicitly inspects the influence of exchange rate, import, export and government consumption on GDP to proxy economic growth. Autoregressive Distributed Lag model (ARDL) Bound test was utilized. The research discovers proof of long run connection between exchange rate fluctuation and GDP in Nigeria. The investigation further uncovers that exchange rate and government consumption have critical beneficial outcome on GDP; import has immaterial negative impact on GDP; export has irrelevant beneficial outcome on GDP. The research presumes that exchange rate fluctuation has critical impact on GDP in Nigeria. The research in this manner recommends that the public authority ought to present import lessening strategy that will settle the import-trade adjusts with the end goal that nearby merchandise can be very much embraced.

Keyword:- *Exchange Rate, Gross Domestic Product, Economic Growth, ARDL, Nigeria.*

I. INTRODUCTION

Exchange rate fluctuation has been an effective issue among different academics, hypothetical scholars and strategy formulators over many years (Zahoor & Muhammed, 2009). Exchange rate framework can be followed to the fell of Gold standard in 1930s which prompted the presence of Breton wood arrangement of fixed exchange rate framework in 1940s and further prompted the adaptable exchange framework by non-industrial nations in 1970 just as others completing primary projects during the 1980s and in the wake of cash unsteadiness in 1990s. Flexible exchange system which was attended by the variations of exchange rate subject it to the main attention in the argument as a result of the influence it portrayed on business outcome as country's trading activities friends preferred stability in exchange rate system compared to the instability and fluctuating exchange rate (Iyeli & Utting, 2017).

Exchange rate is the degree of price at which local nation's currency exchange in relation to foreign nation's currency. Exchange rate relates to the demand quantity/volume of a local currency which can purchase other quantity of foreign currency (Humyra, 2014). Fluctuation of exchange rate induces uncertainty and risk in investment decision with destabilizing effect on the macroeconomic indicators (Mahmood & Ali, 2011). Mordi (2006) noted that private sector operators are concerned with trend of exchange rate because of its influence on their businesses which has significant effect. Aliyu (2011) established that when exchange rate increases it favours import over export and when exchange rate decreases it encourages export and becomes unfavourable to import. Devaluation in exchange rate propels adjustment from abroad goods to local goods. Therefore, it distract placing the revenue from exporting countries above importing countries through a change in term of trade and this however affect the parties countries economic growth (Iyeli & Utting, 2017).

Notably, the era of structural adjustment programme (SAP) in 1986 caused the country to shift attention from fixed exchange rate to flexible exchange system. Irrespective of the exchange rate system being practiced in a country, there is no clean or purely float, that is, a situation where it is left completely to be determined by market forces of demand and supply (Mordi, 2006). Despite all the policies adopted by government to achieve stability in exchange rate especially twenty years ago, the naira (₦) remained devalued against the U. S ($) Dollar. The economic growth of Nigeria started on a good note in the 1970's where its GDP stood at ₦ 5281.10 million as the period coincided with the end of civil war which necessitated the need for massive reconstruction activities. Growth rate of GDP was negative in 1986, 1987, 1991, and 1995 while exchange rate kept on rising. Apart from these four years. Nigeria has never experienced negative growth since flexible exchange rate was adopted in Nigeria. There was a drastic increase in exchange rate from 1999 to 2000; 2003 to 2004 and 2015 to 2016 and 2017 as naira depreciated from ₦21.89 in 1999 to ₦85. 98 in 2000 while the growth rate moved from 0.5% to 5.3%, the naira was further depreciated from ₦129.22 in 2003 to ₦132.89 in 2004 while the growth

rate moved from 10.4% to 337% in 2004, the exchange rate was increasingly depreciated from ₦193.28 in 2015 to ₦305 in 2017 while the growth rate moved sluggishly from 5.73 to 7.51 in 2017 (Inam & Umobong, 2015; CBN, 2017).

The deterioration against the U. S. dollar was ascribed by some to the decrease in the country's unfamiliar exchange holds while some others contended that the exercises of some market administrators (theorists) and banks were answerable for late decrease in the estimation of the naira (Iyeli & Utting, 2017). Obadan (2006) claimed that powerless production base, over dependency on imported goods; friable export and low non-oil export revenue were the main factors responsible for devaluation of exchange rate. From the above illustration, exchange rate of naira increases although the rate of growth seems to maintain a positive state, but the rate at which exchange rate rises is far above the rate of growth.

The growing trend of exchange rate and its coarse effects on economic actions stand as a main concern among macroeconomists, theoretical thinkers and policymakers. In the reign of fixed exchange rate regime, there is stability of exchange rate movement but the economy is retrogressing on daily basis as a result another exchange regime came to being which is called flexible exchange rate regime, nevertheless the flexible exchange rate is not much different from what was earlier adopted as the naira deteriorates on daily basis leading to instability of macroeconomic variables (Iyeli, Nenbee & Opue, 2011; Okoronta & Odoemena, 2016). The depreciation of naira value is unfavourable to import and favourable to export and over dependence on imported inputs. Changes in income earning of the export crop producers came as a result of variations in foreign world price. Such price changes, however, may lead to a great diminution in tomorrow's production if not cautioned and unsteady. These variations therefore are undesirable since they promote foreign transactions risks and uncertainties and thus distract trade, this implies that the greater the exchange risks the lower the expected income returned from exports thus minimizing the incentives to trade (Onyago, 2014), and this therefore hampers economic growth of a nation.

Import subordinate economies like Nigeria faces exchange rate difficulties because of absence of mechanical framework, modern exercises significantly rely upon imported information sources. Nigeria relies widely upon receipts from oil trades, however hugely imports refined oil and other related items. The common import-subordinate mechanical construction got impractical as the mounting import bills couldn't make up with the current export income (Nwosu, 2016). Thus, there is issue since import bill normally bring about the demand for forex and normally lead to an increment in exchange rate. The different financial approach changes and exchange rate changes have neglected to reestablish soundness in exchange rate and keep a low and stable expansion rate. The investigation of Nwosu (2016) demonstrated that exchange rate fluctuation will in general prompt unwanted macroeconomic wonders, for example, expansion and additionally the giving of endowments for example by the public authority when costs of items are low which eventually yield an inefficient misfortune.

There exist disputable proof in writing identifying with exchange rate and GDP (economic growth), some observational investigations set up a huge negative connection between them (Okorontah and Odoemena, 2016; Eme, Akpan and Atan, 2012) different examinations have rather finished up a positive relationship (Iyeli and Utting, 2017; Usman and Adegbite (2013). A negative relationship would infer that GDP growth rate is hosed by precarious exchange rate and hence hazard disinclined financial backers and brokers don't completely include in economic activities. An immediate nexus would imply that dealers and financial backers are initiated to completely utilize their activity all through with a considered utilizing eccentric exchange rate and this could prompt expanded economic growth. It is against the foundation that this research tries to answer the question, does exchange rate fluctuation influence the gross domestic product (GDP) as measure of economic growth in Nigeria both in the short and long run respectively. The next section review the literature, methods and analysis follows while the last section gives policy implications and recommendations.

II. LITERATURE REVIEW

Exchange rate is alluded to the cost of home cash (naira) in regard to foreign money US (dollar) (Mordi, 2006; Jhingan, 2010). It is the cost at which naira exchanges for US dollar. The upward and down move of exchange rate implied the intensity and weak of cash in regard to worldwide money and it is the acknowledged reach for explaining the seriousness of nearby areas in the worldwide market (Razazadehkarsalari, Haghiri and Behrooznia, 2011). Azeez, Kolapo and Ajayi, (2012) additionally asserted that when exchange rate withdrew from its benchmark inside extensive period, it is alluded to as exchange rate fluctuation which likewise showed the misalignment of exchange rate as happened where there is variety of business sectors corresponding with the authority market.

Devaluation happened when the amount or volume of naira which is demanded to buy US dollar is more than what it used to be, appreciation happened when converse is the situation (Jhingan, 2010). At the point when genuine exchange rate appreciates, it has propensity to make current record issue because of overvaluation. The impact of the overvaluation is that it by and large makes import erroneously modest in this way making export expensive, hence limiting the unfamiliar seriousness of a country (Takaendesa, 2006). Oladipupo and Ogheneov (2011) hail the huge part of exchange rate in unfamiliar exchange because of the way that no economy is independent. Exchange rate has its way at affecting other large scale economic factors like loan cost, expansion rate, joblessness, cash supply and so forth. This conviction underscored the meaning of exchange rate to the economic prosperity of each country that makes its ways for unfamiliar exchange merchandise and ventures.

In the discussion of Balassa and Samuelson model (1963), it was accounted for that countries with great creation limit normally face high growth in wage which produce high genuine exchange rate. More so, any upward move in tradable area will result to an upward move in non-tradable area of the

country. However, should the growth in wage not commensurate with the efficiency economies, it will result to current record overflow that is, delivering over what they could devour. Should the growth of compensation rate expansion quicker than the rate of profitability, workers will devour overabundance merchandise which result to current record shortfall. This shows that the form of exchange rate framework either stake or adaptable exchange rate system a country clings to decide the impact of such on her gross domestic product GDP. Expansions overall costs are a sign of stake exchange rate framework while expansion in exchange rate demonstrates the appropriation of adaptable exchange framework (Akila, 2004).

Okorontah and Odoemena (2016) examined the impact of exchange rate on economic growth of Nigeria. The investigation assembled yearly data (1986-2012), OLS procedure, Johansson co-integration test and the Error correction mechanism (ECM) insightful tests were utilized and the examination discovered proof of no solid connection between exchange rate and economic growth in Nigeria. Amassoma and Odeniyi (2016) also examined the connection between exchange rate and economic growth in Nigeria utilizing yearly information somewhere in the range of 1970 and 2013. The examinations were conducted through Johansen Cointegration test. Clearly, the examination discovered unimportant constructive outcome of exchange rate on the growth of Nigerian economy.

Hajilee and Al-Nasser (2017) cross country study of 26 countries comprising of emerging, developed and developing which covered 1980 to 2011. The examination completed its investigation utilizing ECM and Johansen cointegration model to find both the long and short run impact of exchange rate in huge number of the nations. The investigation tracked down that monetary profundity contributed genuinely to exchange rate in 16 out of 26 nations. The limits test approach showed that exchange rate has contributive effect on monetary profundity of 20 countries. In an investigation by Gbatu, Wang, Wesseh and Tutdel (2017) on Liberia, it was revealed through vector autoregressive model that exchange rate has no huge interrelationship with economic growth anyway the change disintegration result made it unequivocally seen that stuns to economic growth in Liberia is linked to variety in exchange rate. In South Africa, Fourie, Pretorious, Harvey, Van-Niekerk and Phiri (2017) utilized smooth change relapse (STR) model to research nonlinear nexus between transformation scale unsteadiness and monetary improvement from 1970 to 2016. The assessment demonstrated that the trading scale monetary improvement relationship is without a doubt nonlinear inside the reviewed time span. In particular, the assessment found that framework trading conduct was supported by government size in which change scale instability by and large influenced monetary advancement when improvement in government spending is under 6%. Eccentricism applied an immaterial effect on financial turn of events. Guellil, Marouf and Benbouziane (2017) inspected the effect of the change scale frameworks on financial improvement in non-mechanical countries. The assessment Panel Data, a model containing around 38 agrarian countries during the time period from 1980 to 2013 contingent upon two sorts of transformation scale frameworks: fixed and center frameworks. The assessment relied upon Fully Modified Least Squares (FMOLS) to know the framework which has the best in regards to money related turn of events. The assessment uncovered that there is a positive association between change standard framework and financial advancement with a tendency for fixed trading scale frameworks in achieving the most vital improvement rate.

In Nigeria, Iyeli and Utting (2017) collected discretionary data on Real GDP and other variables from CBN Statistical Bulletin to separate the work of transformation scale on financial improvement in the scope of 1970 and 2011. Johansen Co-integration test was used and uncovered that OREV and EXR quite agreed with RGDP. Considering the result, the examination contemplated that oil pay similarly as change scale influence strongly the RGDP. Mbanasor and Obioma (2017) overviewed the effect of change scale minor takeoff from Nigeria's balance of payment. Yearly time course of action data on import rate, exchange rate and the GDP were analized using two-stage least square and granger causality. The examination found and assumed that transformation standard instabilities have an unimportant helpful result on Nigeria's balance of payment. Ndu-Okereke and Nwachukwu (2017) applied VAR econometric apparatus to consider the impact of exchange rate fluctuations on the Nigerian economy. Proof from the discoveries showed sign of huge and positive impact of unfamiliar exchange supply on economic growth while demand for unfamiliar exchange portrayed contrarily on economic yield.

III. RESEARCH METHODS

Annual time series data employed were based on secondary measurement. The data on these variables namely; Exchange rate (EXR), import (IMP), export (EXPr), total government expenditure (GEXP) were the explanatory variables regressed on real gross domestic product (RGDP) as the dependent variable. The data were secondarily sourced from Central Bank of Nigeria Statistical Bulletin for the period of 1986-2017. The justification for the former year was as a result of structural adjustment programme and the latter year was the extent at which annual time series data could be gotten. Expectantly, all the variables should depict positive influence on RGDP. Summarily, it is expected that: $\beta_0 > 0$; $\beta_1 > 0$; $\beta_2 > 0$; $\beta_3 > 0$; $\beta_4 > 0$

IV. MODEL SPECIFICATION

The empirical model of the study was based on the study of Inam and Umobong (2015) on exchange rate movement and economic growth in Nigeria (1970-2011) which was modified and adapted. The modified model for the study is stated as:

$$RGDP = f\ (EXR, IMP, EXP, GEXP) - - - - - -3.1$$

$$RGDP_t = \alpha_0 + \alpha_1 EXR_t + \alpha_2 IMP_t + \alpha_3 EXP_t + \alpha_4 GEXP_t + \mu_t - - - - - - - - - - - - - - - -3.2$$

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Where: *RGDP* = Index of Gross Domestic Product (Real GDP) expressed in naira value; *EXR* = Exchange rate expressed in rate; *IMP* = Import expressed in naira value; *EXP* = Export expressed in naira value; *GEXP* = Government expenditure expressed in naira value; μ_t = error term.

V. ESTIMATION TECHNIQUES

Autoregressive Distributed Lag model (ARDL) is utilized in the examination. The method of ARDL got fundamental for the investigation since it can all the while build up short run and long run relationship at a time. All the more in this way, ARDL is better than Johansen cointegration based on mixed stationarity level i.e. I(0) and I(1) but must not exceed I(1) unlike Johansen cointegration which rule stated that all variables should be associated of the same order.

The ARDL estimation technique is stated as;

$$\begin{aligned}\Delta \ln(RGDP)_t = \lambda_0 + \sum_{i-1}^{n}\lambda_1 + \Delta ln(RGDP)_{t-1} + \sum_{i-1}^{n}\lambda_2 \\ + \Delta ln(EXR)_{t-1} + \sum_{i-1}^{n}\lambda_3 \\ + \Delta ln(IMP)_{t-1} + \sum_{i-1}^{n}\lambda_4 \\ + \Delta ln(EXP)_{t-1} + \sum_{i-1}^{n}\lambda_5 \\ + \Delta ln(GEX)_{t-1} + \beta_0 \ln(RGDP)_{t-1} \\ + \beta_1 ln\,(EXR)_{t-1} + \beta_2 ln\,(IMP)_{t-1} \\ + \beta_3 ln\,(EXP)_{t-1} + \beta_4 ln\,(GEXP)_{t-1} \\ + \mu_{it} \quad ----------3.3\end{aligned}$$

Where ln (RGDP) is the natural logarithm of real gross domestic product deflator, ln (EXR, IMP, EXP, GEXP) were the natural logarithm of exchange rate, import, export and government expenditure, Δ is the change in each operator and μ_{it} is the stochastic error term. In investigating the long run association with restriction of coefficients α_1, α_2, α_3, α_4 the null hypothesis in long run was written as follow:

$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$

However, for policy reasons, the short-run adjustment of real gross domestic product, government expenditure, exchange rate, import and export to changes in its determinants is necessary. The significance of error correction model lies in its ability to correct spurious regression results on time series data. The error correction model (ECM) is specified as:

$$\begin{aligned}\Delta ln(RGDP)_t = \alpha_0 + \sum_{i=0}^{n}\lambda_i\ \Delta ln(EXR)_{t-1} \\ + \sum_{i=0}^{n}\lambda_i\ \Delta ln(IMP)_{t-1} \\ + \sum_{i=0}^{n}\lambda_i\ \Delta ln(EXPr)_{t-1} \\ + \sum_{i=0}^{n}\lambda_i\ \Delta ln(GEXP)_{t-1} + (ECM)_{t-1} \\ ----------3.4\end{aligned}$$

Where; ECM_{t-1} = Error correction model; $t-1$ shows variables were lagged by one period; Δ = Changes in ECM coefficient.

VI. RESULTS AND DISCUSSION

Unit Root Test

The presence of a unit root implies that the time series under investigation is non-stationary while the absence of a unit root shows that the stochastic process is stationary. The unit root test was carried out with the aid of Augmented Dickey-Fuller (ADF) tests.

Table 1: ADF Unit Root Test Results at Level

Variables	ADF Test Statistics	Critical Value	Integration Level	Remarks
RGDP	-3.062111	-2.963972	I(1)**	Stationary
EXR	-6.057405	-3.670170	I(1)***	Stationary
IMP	-3.495136	-2.960411	I(0)**	Stationary
EXP	-3.036327	-2.960411	I(0)**	Stationary
GEXP	-3.723719	-2.960411	I(0)**	Stationary

Note: **(**)(***) - Significant at 10%(5%)(1%) percent level respectively*

Source: E-view 9 Statistical Package

Table 1 showed that all the variables that is; real gross domestic product (RGDP), exchange rate (EXR), import (IMP), export (EXP) and government expenditure (GEXP) were stationary at levels and first difference respectively and at 10%, 5% and 1% significant levels respectively. This implied that import, export and government expenditure were stationary at level and at 5% whereas real gross domestic product and exchange rate were stationary at first difference at 5% and 1% respectively. The implication is that there existed mixture of differencing order of integration which theoretically nullified the rule of Johansen cointegration and validates the adoption of Autoregressive Distributed Lag model (ADRL). Hence ARDL bound test method was employed on co-integration.

Co-integration

Null Hypothesis: No long-run relationships exist

Table 2: Pesaran Shin (1999) Bounds Test Table

Test statistics	Value	Regressors(k)
F-statistics	9.039732	4
Critical Value Bounds	I(0) Bound	I(1) Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: E-view 9 Statistical Package

Table 2 indicated that the F-stat of 9.039732 is higher than any of the Upper Bound Table value which implied that the null hypothesis that no long-run relationship exist cannot be accepted. Hence, the existence of long-run relationship among the variables in the model was accepted leading to the analysis of long run analysis and the short-run dynamic and error correction analysis.

Long and short run Estimation Coefficients

Table 3: Long Run Co-Integrating Coefficients

Variable	Coefficient	St. Error	t-Statistic	Prob.
C (RGDP)	3.657923	0.139864	26.153385	0.0000
EXR	0.379271	0.074737	5.074748	0.0004
IMP	-0.318247	0.219554	-1.449516	0.1751
EXP	0.279589	0.143645	1.946387	0.0776
GEXP	0.578680	0.156571	3.695951	0.0035

Source: E-view 9 Statistical Package

Table 3 showed the interrelationship among the factors. Clearly, Table 3 showed that there existed a positive connection between exchange rate and GDP in Nigeria. It in this way suggested that exchange rate has huge positive relationship with monetary development and will prod the development of Nigerian economy by 3.79% increment. The examination likewise uncovered negative and measurably unimportant coefficient of import suggesting the presence of negative and inconsequential long-run connection of import and GDP in Nigeria. Therefore, 1% change in import diminishes Nigeria GDP by 3.18% change. The coefficient of export was positive with an immaterial impact on monetary development, thus there exist a positive and irrelevant long term connection between trade and GDP in Nigeria. Consequently, 1% change in exports results in insignificant increments in GDP monetary development in Nigeria by 2.79%. In conclusion, the coefficient of government spending uncovered a positive and genuinely critical relationship with GDP in Nigeria. This is a proof of positive and critical long term connection between government spending and GDP monetary development in Nigeria. This hence inferred that 1% expansion in government consumption will thus yield about 5.78% increment in Nigerian GDP as well as economic growth.

The Short-run Dynamic and the Error Correction Model

Table 4: Short-run Dynamic and ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	0.332501	0.205911	1.614781	0.1347
D(RGDP(-2))	0.668215	0.301882	2.213495	0.0489
D(RGDP(-3))	-0.502242	0.198397	-2.531499	0.0279
D(EXR)	0.025643	0.055016	0.466098	0.6502
D(EXR(-1))	0.153892	0.065566	2.347136	0.0387
D(IMP)	-0.010918	0.048289	-0.226090	0.8253
D(IMP(-1))	-0.061537	0.036111	-1.704112	0.1164
D(EXP)	0.003499	0.033104	0.105712	0.9177
D(GEXP)	0.055239	0.038431	1.437354	0.1784
D(GEXP(-1))	0.000218	0.039202	0.005560	0.9957
D(GEXP(-2))	0.101584	0.037554	2.705026	0.0205
ECM(-1)	-0.259210	0.071618	-3.619354	0.0040

Source: E-view 9 Statistical Package

Table 4 clarified that ECM was effectively endorsed at -0.259210 however a lethargic pace of change yet critical. Thus, it tends to be said that the level at which exchange rate vacillation change in accordance with harmony was about 25.9% on yearly premise.

The short run result uncovered that exchange rate has an immaterial positive relationship with GDP yet subsequent to differencing (EXR(- 1) got huge. In this manner, it very well may be inferred that the slacked of exchange rate esteem has the coefficient of 0.153892 suggesting that swapping scale expanded economic growth by 1.53% in the short run. The short run result additionally showed that the estimation of import and slack of import were adversely and irrelevantly identified with GDP in Nigeria, this suggested that the estimation of import and slack of import inconsequential diminished GDP as well as economic growth by 0.01% and 0.06% individually. Strangely the consequence of import is in consistence with the long run result demonstrating negative and inconsequential impact on monetary development in Nigeria. The estimation of export presented the current relationship among export and monetary development in Nigeria is unimportantly negative in the investigation period. This suggested that the connection among trade and economic growth is negative in nature and along these lines diminished the yield of monetary development in Nigeria by 0.03%. At long last, government spending has constructive outcome on GDP in Nigeria. Notwithstanding, slacked of government consumption (GEXP(- 2) indicated the critical aftereffect of government spending at 5% degree of importance. Thusly, government expenses (GEXP(- 2) has positive and huge impact on GDP and monetary development in Nigeria. Taking everything into account, 1% change in government spending

emphatically expanded economic growth in Nigeria by 1.01%. The outcome similarly approved the aftereffect of the longtime relationship.

Residual Diagnostic Test

In the investigation, indicative tests that were distinguished are sequential connection LM test; Ramsey Reset test; ordinariness test and heteroscedasticity test (ARCH). The after effects of the indicative tests were appeared in the Tables beneath.

Autocorrelation Test

Table 5: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.011960	Prob. F(2,9)	0.1896
Obs*R-squared	8.650988	Prob. Chi-Square(2)	0.1332

Source: E-view 9 Statistical Package

The Breusch-Godfrey sequential LM test shown in table 5, estimates the legitimacy of the displaying suspicions natural in applying relapse like models to notice information arrangement. The Breusch-Godfrey test result as depicted in LM section of table 5 showed that there was existence of no serial correlation in the residuals because observed R-squared (8.650988) has its corresponding prob. chi-square to be higher than 5% level. Therefore, the hypothesis that no existing autocorrelation is accepted which made the model dependable and free from any serial error correlation.

Stability Test

Table 6: Ramsey RESET Test

	Value	df	Probability
t-statistic	1.003424	10	0.3393
F-statistic	1.006859	(1,10)	0.3393

Source: E-view 9.5 Statistical Package

Table 6 showed Ramsey RESET test is a relapse particular mistake test. The RESET test is generally utilized to test for a non-zero mean of the blunder term. The invalid speculation is that, the relapse model fit the information well versus its elective theory of invalid relapse model. From all indication the p-value of 33.93% is higher than 5%, therefore it can be inferred that the model do fits the data leading to stability of the model.

Heteroscedasticity Test (ARCH)

Table 7: Heteroskedasticity Test: ARCH

F-statistic	0.216338	Prob. F(1,25)	0.8993
Obs*R-squared	0.217633	Prob. Chi-Square(1)	0.8944

Source: E-view 9 Statistical Package

The existence of heteroscedasticity ARCH test is a major concern in the analysis of variance (ANOVA), including the presentation of regression analysis, as it can invalidate statistical tests of significance that postulates that modeling errors are uniform and uncorrelated. Therefore, this section of the Table revealed that the observed R-squared probability chi-square (0.216338) is above 5% significant level which implied that there is no heteroscedasticity in the modeled regression thereby affirming the regression result efficient and reliable. Hence, the residual of the regression are homoscedastic (all random variables in the sequence or vector have the same finite variance) and normally distributed with no serial autocorrelations therefore it can be concluded that the model was valid.

Normality Test

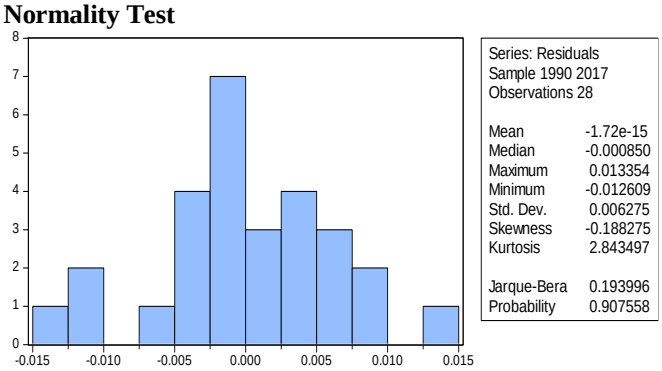

Fig. 1: Normality Test

Source: E-view 9 Statistical Package

It is normal that the relapse residuals ought to be typically circulated. It is a smart thought to check if the residuals are typically appropriated, this isn't fundamental for determining however it makes the count of expectation spans a lot simpler. Consequently, a basic glance at the histogram test bring about Fig.1, the Jarque-Bera measurements demonstrated the ordinary appropriation of the lingering in light of the JB p-esteem 0.193996 (19.39%) > 5%. In this manner, the leftover of the examination was typically circulated.

VII. DISCUSSION AND CONCLUSION

The examination explored the question does exchange rate fluctuation influence the gross domestic product (GDP) of nation with special reference to Nigeria. Proof from Augmented Dickey-Fuller (ADF) unit root test showed that import, export and government spending unit root were fixed at level I(0) while exchange rate and genuine GDP were fixed from the start contrast I(1). Hence, ARDL Bound test was employed on co-integration and discovered that truly there exist long run association among the parameters.

The long term connection between exchange rate and GDP as proxy of economic growth demonstrated that the F-measurement of 9.039732 was higher than the lower and upper bound estimations of 2.86 and 4.01 separately. This highlight the significance of exchange rate variance in GDP monetary development and improvement of an economy, henceforth exchange rate development has a long term relationship with GDP as proxy of economic growth in Nigeria. This subsequently inferred that swapping scale arrangement of a nation has the inclination and the extent to speed up the GDP, speed of development and advancement in an economy. It corroborates Odili (2015) long term connection between rate of exchange and economic growth in Nigeria.

Taking a careful look at the result of the study both at the long run and short run, it revealed that import has a negative and an insignificant relationship with GDP. This is in tandem with the economic *apriori* positive expectation and it is in connection with empirical findings of Nwosu (2016) and Elias, Agu and Eze (2018) whose studies concluded negative effect of import on economic growth in Nigeria. The study implied that the negative relationship between import and real gross domestic product (rGDP) will subject the Nigerian economy to continuous shrinking, that is, the more Nigeria depends on imported goods and services the lower the GDP as well as economic growth rate, this is because exchange rate and import affect economic growth simultaneously such that the weighty importation into the country and continuous variation in exchange rate could bring distortions to the terms of trade causing the balance of payments to be opposing. This study further implied that Nigerians need to swap from excessive import consumption to domestic consumption in an effort to promote local industries and home made goods other than foreign goods and services. Hence, effort should be reinvigorated by the Nigerian government to put in policy measures that will carter for trade balance such that Nigerians will reframe her extravagant consumption and dependence on foreign goods and services.

The study further revealed that export has insignificant positive relationship with GDP as well as economic growth in Nigeria both in the long run as well as the short run. The relationship conformed to the positive stated *apriori* expectation. The study equally validated the empirical findings of Adeleye, Adeteye and Adewuyi (2015); Oloyede and Essi (2017); Elias, Agu and Eze (2018), that export has positive relationship with economic growth in Nigeria. This result is not amazing on the note that the Nigerian export sector is well overwhelmed by oil which is an essential national commodity and earns large foreign exchange for the economy. Nwosu (2016) asserted that about 70% receipts from oil export are used to finance government expenditure leading to economic growth. The implication arising from the study is that while Oil sector account for the large proportion of the revenue to Nigerian government, other sectors such as the Manufacturing sector, Mining sector, Agricultural sector, etc could be revitalize, encouraged and well concentrated on in such a way that the sectors will favor GDP as well as economic growth through high demand of goods globally. Therefore, Nigerian government should give room for export diversification.

The study further explored that exchange rate has positive and significant relationship with GDP and growth of Nigerian economy. The outcome conformed to the theoretical expectation of positive relationship with economic growth. The study is consistent with the empirical study of Inam and Umobong (2015) that exchange rate is positively related with economic growth in Nigeria. Nevertheless, government needs to adopt a befitting exchange rate policy that is capable of stabilizing exchange rate to enhance economic growth and development. The depreciation of the country's currency value is likely to increase the cost of imported raw materials as well as the cost of imported finished goods. Thus, producers would prefer domestically sourced inputs. Similarly, homemade products would become more preferable to consumers as they will be offered at a cheaper rate than their foreign substitutes. Thus, exchange rate depreciation has a way of encouraging local production and boosting national output (Inam & Umobong, 2015). Based on this, occasional devaluation of the naira by the government and the monetary authorities should be allowed as it is capable of enhancing growth performance, improved GDP and boosting the Nigerian economy.

In conclusion, government consumption has critical positive relationship with GDP as well as economic growth in Nigeria on the long run just as on the short run. This is in congruity with the positive *apriori* assumption. The examination is likewise in reliable with the finding of Ismaila (2016); Jelilov and Musa (2016) who considered finished up sure huge connection between government expenses and economic growth in Nigeria. The ramifications emerging from the examination is that administration should situate its consumption on human resources advancement that will yield immediate and ceaseless economic growth. To guarantee the standard of living of residents in the economy, public supports should be sufficiently and very much formed in legitimate activities at the correct opportunity to fulfill the nation's need as opposed to spending on tremendous tasks that won't fundamentally impact each resident of the country. Subsequently, the public authority should situate its financial plan towards the beneficial areas like schooling, framework and social conveniences as it would decrease the expense of working together just as increase the expectation living of helpless ones in the country. The examination is steady with the investigation of Inam and Umobong (2015), that exchange rate fluctuation do influence the Nigeria's GDP and economic growth respectively.

RECOMMENDATIONS

The study proffered the following recommendations based on the test of hypotheses:

The government should introduce import reducing policy that will stabilize the import-export balances such that local goods can be well embraced and bring about improvement in the nation's GDP; Exchange rate is a macroeconomic variable with effects on the GDP as well as economic growth, hence regulatory authorities need to study and comes up with the best approach that could help stabilize fluctuation of exchange rate which at the end would promote GDP, economic growth and development amongst other important variables; Export diversification to manufacturing and agricultural sector will help to minimize the over revenue dependence on oil sector. Hence, government should diversify its export base to other productive sectors aside oil sector; Government expenditure should focus on the welfare of the citizen and not to improve economic growth unnecessary without proper concern and care for welfare of the people.

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