

NIGERIA FOREIGN EXCHANGE RATES AND ITS EXTERNAL RESERVES POSITION: A REASSESSMENT

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Abstract

This study examines the effect of exchange rate on the external reserves position of Nigeria from 1994 to 2019 using secondary data from Central Bank of Nigeria Statistical Bulletin. There is absence of unit roots among the variables and the co-integration tests revealed a long term equilibrium relationship among the variables. The result of the error correction model discloses that exchange rate has negative and significant effect on external reserves. Furthermore, an increase in the external reserves in the previous year leads to 34% increase in the reserves in the current year. Also, gross domestic product is positively and significantly related with external reserves while inflation and external reserves are negatively and insignificantly related. It is thus concluded that exchange rate has negative relationship but insignificant effect on foreign exchange reserves of the country resulting from the outflow of

foreign reserves to control undue depreciation of the exchange rate. The study, however, recommends that exchange rate should be adequately managed in order to control excessive depreciation in the nation's currency against other currencies of the world. This will lead to increase in export and subsequently boost foreign exchange reserves.

Key Words: *External Reserves, Exchange Rate, Gross Domestic Product, Inflation*

JEL CODE: *F31; F65; G15*

1. Introduction

Developing economies of the world like Nigeria, South Africa, China, India, Malaysia, United Arab Emirate and Ghana among others focused their policy attentions on the accumulation of foreign reserves. The level or size of foreign assets a country possess determines the level of assets such country is holding (Ito & Mccauley, 2019). The development of accumulating foreign exchange reserves commenced around 1990, which marks the era of

globalization through which economies of the world are integrated and interrelated through trade and financial policies which influenced world trade, financial stability, growth and development (Kruskovic & Maricic, 2015).

Maintenance of adequate reserves has become a prerequisite in achieving sustainable internal and external balance for most developing nations due to their over reliance on importation and mono culture state of their economy. This makes such countries to possess dual maintenance policies of accumulating foreign reserves through lowering the value of its currencies and at the same time stabilizing the exchange rates to offset external shocks and facilitate trade (Domniguez, 2019). Exchange rate remains the major macroeconomic variable for maintaining both internal and external balance through a competitive trade relationship with the rest of the world as noted by Schwanz (2019), meaning that the level of foreign reserves is a function of exchange rate stabilization.

In spite of the policy reforms and exchange rate regime adopted by the monetary authorities, the country has achieved little in terms of growth and foreign reserves stock accumulation (Osuji & Ebringa, 2012; Udo & Antai, 2014; Akinkunmi & Adekoya, 2016; Nwachukwu, Ali, Abdullahi, Shettima, Zirra, Falade & Alenyi, 2016).

There was a serious upsurge of the exchange rate from 2015 to 2016 which later became relatively stable between 2016 and 2019. Then, after the period of recession in 2016, the reserves picked up and later fell drastically again in 2018 and 2019. The question is; to what extent has the fluctuation in exchange rate contributes to the dwindling nature of the level of reserves in Nigeria? Hence, this study is focused on examining the effect of exchange rate on the reserve position in Nigeria from 1994 - 2019. The rest of the paper is divided into literature review, methods, interpretation of results and conclusion.

Literature Review

The policy thrust of most developing nations is anchored upon the maintenance of effective exchange rate regime that can enhance medium and long term sustainable internal and external macroeconomic balances. This could be achieved through a level of reserves that is capable of supporting economic shocks (Akinwale, Solawon, Adekunle & Obagunwa, 2018). As a result of this, exchange rate uncertainty has increased due to countries' adoption of floating exchange rate system over the fixed exchange rate system (Odili, 2015). In this light, the monetary authorities of countries especially importing dependent ones like Nigeria formulate their exchange rate policy towards amassing foreign exchange reserves.

Over the years, monetary authorities in Nigeria have embarked on different exchange rate regime and divers' policy thrusts have been formulated in order to maintain adequate foreign reserves position. These policies ranges from ad-hoc administrative policy during 1959 - 1967; flexible exchange rate in 1986 which brought about other strategies like Dutch Auction System (DAS), First Tier Official Exchange Rate (FOER), Second Tier Foreign Exchange Rate

(SFEM) and Inter-Bank Foreign Exchange Market. Recently, the country has move towards a more managed exchange rate system in which monetary authorities intercede in exchange rate fixation through the purchase and sales of foreign exchange in order to maintain exchange rate stability

Fapetu and Oloyede (2014).

The studies of exchange rate and external reserves have not yet received the adequate attention it deserves among scholars in Nigeria. The accumulation of reserves results from the aspiration of the policymakers to prevent against incessant depreciation of currency and sustain a nation’s competitiveness in terms of trade position. External reserves can be defined as the public sector foreign assets which are directly under the control of the monetary authorities for the purpose of financing payment imbalances (CBN, 2007). According to IMF (2009), external reserves represent foreign currency deposits by monetary authorities comprising of foreign currencies such as Yen, Euro, Dollar and Pound Sterling among others. The variation and fluctuation in exchange rate can cause significant deviation in foreign exchange reserves.

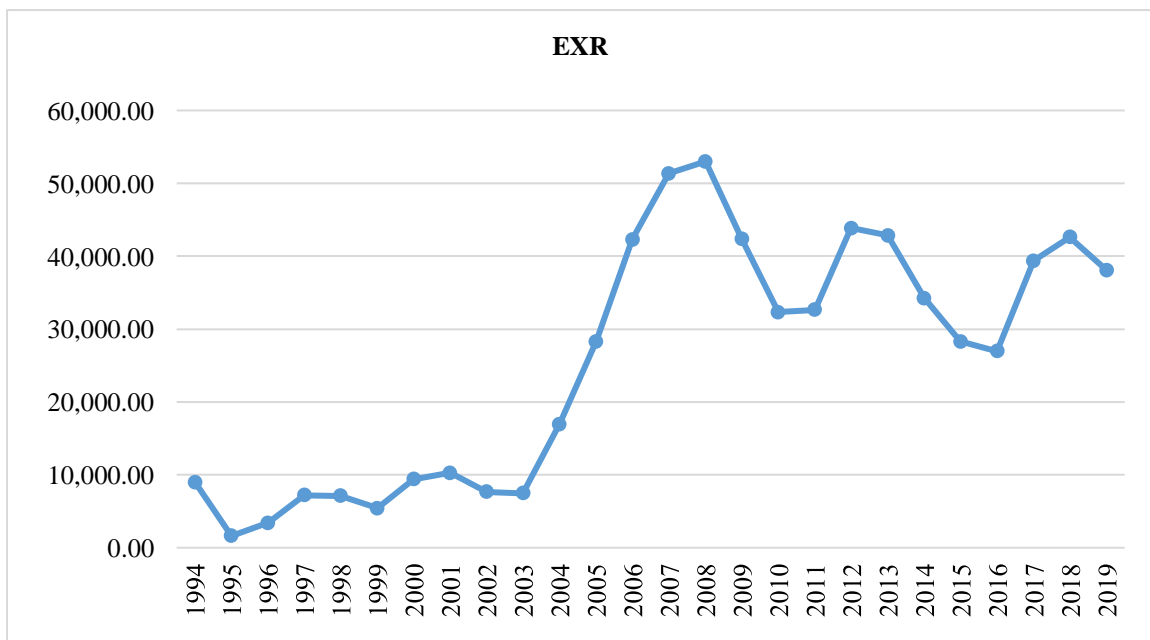


Figure 1: External Reserve Trends 1994 - 2019

The figure above reveals the trends of external reserves in Nigeria. The figure indicates that the external reserves were very low and fluctuating between 1994 and 2002. From 2004, external reserves rose significantly reaching its highest level in 2008 before declining in the last quarter of 2008 through 2011. Although, there was increase in external reserves in 2012 but this increase was not as high as recorded in 2008. However, falls continuously from 2013 to 2016 which result from the effect of recessionary period experienced by the country. Furthermore, there was sharp increase in external reserve between the period of 2017 and 2018. This could be as a result of oil exports which strengthened with increased production and price (World Bank, 2018).

Nwachukwu, Ali, Abdullahi, Shettima, Zirra, Falade & Alenyi (2016) assert that the intervention of the CBN at the interbank market result to a decrease of the Nigeria's external reserves by 14.3% from \$34.24 billion as at December 2014 to \$29.36 billion at the end of March 2015. The CBN spent the sum of N136.96 billion to support the exchange rate and ensure the stability of the financial system in 2014. This development led to an increase of about 220.2 per cent in forex supply in 2014 as compared to 2013. The reserves for March 2015 dropped by \$8bn when compared to the level at the end of March 2014.

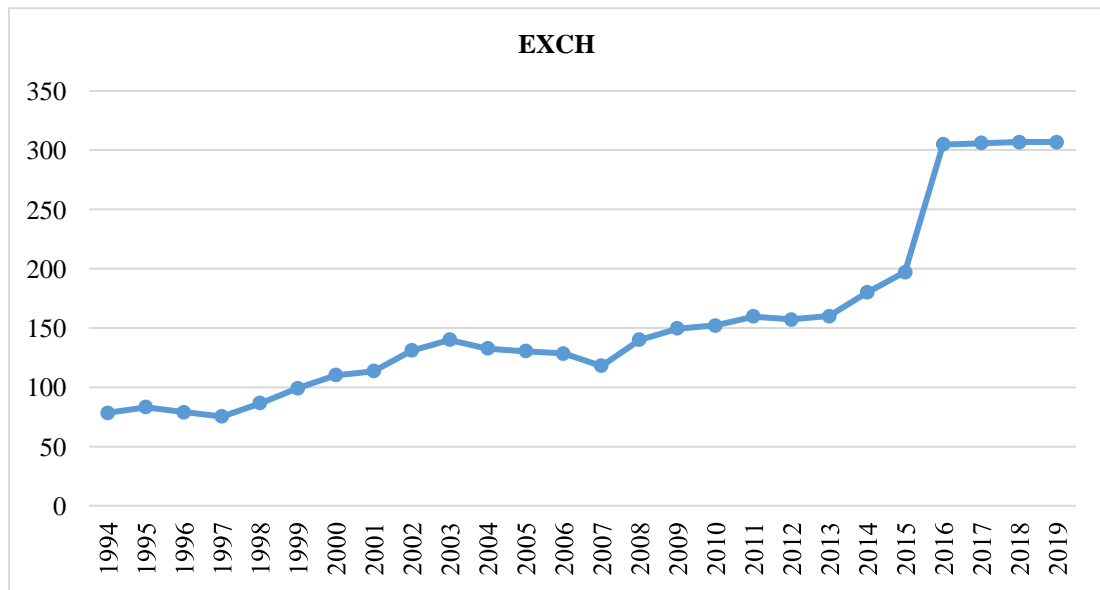


Figure 2: Exchange Rate Trends 1994 - 2019

The trend of the analysis of exchange rate presented above is an indication that Nigerian exchange rate has continued to fluctuate over time. Since the adoption of flexible exchange rate and managed exchange rate regime, the currency has undergone series of appreciation and depreciation. The graph indicates that exchange rate was relatively stable between 1994 and 1998 before appreciating from 1999 through 2007. This period marked the re-introduction of guided exchange rate regime in which the Central Bank of Nigeria serves as the major custodian of foreign exchange. The guided deregulation was introduced in 1995 with the aim of enhancing financial flows and boosting the external reserves position (Akinwunmi & Adekoya, 2016).

In 2008, the exchange rate depreciated before appreciating in 2009, though, the exchange rate was relatively stable through 2013. There was sharp rise and appreciation from 2014 through 2016 which resulted to uncertainties and bedeviled the economy because of 2015 election. Furthermore, exchange rate was relatively high between the period of 2016 to 2019 and this might be attributed to change in government policy and political instability in the country. Throughout 2009, the Nigerian external reserves as depicted in figure 1 above was low; given an appreciated exchange rate. Despite the drawing of reserves by the monetary

authorities to depreciate and stabilize the Nigerian exchange rate, the exchange rate remains relatively unstable over time. This situation was worsening by the over reliance of the nation on crude oil as the major source of foreign earnings and continuous drop in oil price. Meanwhile, through depreciating exchange rate and stimulating economic growth, there is possibility of the foreign

reserves taking an economy out of recession (Kruskovic & Maricic, 2015).

The accumulation of adequate external reserves can prevent uncertainty and shocks by providing cushion for an economy. Umeora (2013) establishes a direct relationship between exchange rate, gross domestic product and foreign exchange reserves while inflation has negative and insignificant effect on foreign exchange rate reserves by examining the relationship between foreign exchange reserves and macroeconomic stability from 1986 to 2011 using multiple regressions. Similarly, Benigno & Fornaro (2012) establish that the government stimulates real exchange rate depreciation and reallocate resources to productive sector in order

to enhance economic growth through the accumulation of reserves.

Through the examination of the impact of foreign reserves in the short and intermediateterm on the real exchange rate, Aizenman, Riera-Crichton & Edward (2012) reveal that foreign reserves are important tools in reducing real exchange rate volatility. In the same vein, by employing ordinary least square (OLS) estimation technique to examine the external reserves management and economic growth in Nigeria over the period 1980 - 2008, Alasan & Shaib (2011) find that external reserves and economic growth are significantly related. This is in consonance with the study of Ajibola, Udoette, Omotosho and Rabia (2015) who found out a threshold coexistence between exchange rate and external reserves.

Furthermore, Gurd (2012) examines the relationship between international reserves and exchange rates in the Turkish economy by using threshold error correction model (ECM) and threshold granger causality test and indicates that there is high degree of correlations and relationship between external reserves and exchange rate in Turkey.

Contradicting the findings above is the study of Gokhale & Raju (2013) that examine the direction of relationship between exchange rate and foreign reserves in Indian using Causality Test and it is indicated that there is no long run and short run correlation relationship between foreign exchange reserves and exchange rates. Supporting this assertion, Oputa & Ogunleye (2010) find that excess external reserves do not necessarily enhance growth and macroeconomic stability while estimating the optimal level of international reserves in Nigeria along the line of the drivers of external reserves.

Contrarily, Tariq, Haq, Jan, Jehangir & Aamir (2014) adopt the mercantilist theory to ascertain the interaction between the real exchange rate and foreign exchange reserves in Pakistan from 1973 to 2008 and it was indicated that the accumulation of reserves in Pakistan resulted to export led growth strategies through real exchange rate depreciation.

Akinwunmi & Adekoya (2016) examine the effect of external reserves management on the Nigerian economic growth over the period from 1985 – 2013. The study employs multiple regression to establish the relationship between economic growth and external reserves management in Nigeria and finds that GDP, MPR and FDI contribute greatly to Nigeria's external reserves position.

Nwachukwu *et al.*, (2016) explore the long-run relationship between exchange rate and external reserves in Nigeria using Threshold Vector Error Correction Model (TVECM)

framework on daily data which covered the period of January 1, 2014 to July 31, 2015. It was indicated that there is a non-linear long-run relationship between exchange rate and external reserves in Nigeria.

A critical review of previous studies basically focuses on the impact of foreign reserves on economic growth and the type of causal relationship that exists between exchange rate and foreign reserves. It is pertinent to know that the empirical relationship between external reserves and exchange rate has not yet received adequate attention especially when the nation exit recessionary period. Before the country exit recessionary period, there were divers policies formulated by the authorities that included exchange rate stabilization policy, inflationary control measure among others. Now that the county is out of recession, despite the exchange rate stabilization, why is the position of foreign reserves still dwindling? Therefore the main objective of this study is to examine how the exchange rate has actually affected the position of external reserves in Nigeria despite the exchange rate stabilization policies by the authorities.

3. Research Methods

The data for this study are quantitative and historical in nature; thus, the study employs ex-post facto research design to examine the relationship between the explanatory variables proxy as Exchange Rate, and Gross Domestic Product, and Inflation Rate as control variables) and the explained variable (External Reserves). The data for the study are mainly secondary data

which were extracted from Central Bank of Nigerian Statistical Bulletin (2019).

The hypothesis to be tested in this study is whether the foreign exchange rate has a significant effect or contribution to the foreign reserves position in Nigeria. Two control variables are also included which are the gross domestic product and inflation. The hypothesis in the null form is stated as follows:

H₀: Exchange rate has no significant effect on the Nigerian external reserves

The study employed multiple regression model frameworks following the study of Akinwumi and Adekoya (2016); Nwachukwu *et al.*, (2016). The econometric model for the study is given as

$$EXR = f(EXCH, GDP, INF) \quad (1)$$

$$EXR = \beta_0 + \beta_1 EXCH + \beta_2 GDP + \beta_3 INF + U_t \quad (2)$$

Where

EXR = External Reserves

EXCH = Exchange Rate

GDP = Gross Domestic Product

INF = Inflation Rate $\beta_0 =$

Constant Term $\beta_1 - \beta_3 =$

Coefficient of the Parameters

ϵ = Error Term

By decomposing the econometric model above to form an Error Correction Model we have:

$$EXR_t = \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta LOGEXR_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta LOGEXCH_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta LOGGDP_{t-i} + \sum_{i=0}^n \beta_{4i} \Delta LOGINF_{t-i} + ECT(-1) + e_t \quad (3)$$

Where Δ represents the differencing form, LOG was given as Log number of the variable and

ECM represents Error Correction Model.

Given the nature of the macroeconomic data, the study employs Augmented Dickey Fuller Test (ADF) to check the stationarity of the variables. Furthermore, Johansen Cointegration test is adopted to establish the long run relationship among the variables while the study employs Ordinary Least Square version of the Error Correction Model to reveal the speed of adjustment of the variables from short run to long run equilibrium state.

4. Presentation and Analyses of Results

Table 1: Correlation Matrix

	EXR	EXCH	GDP	INF
EXR	1.000000			
EXCH	0.074612	1.000000		
GDP	0.210083	0.462681	1.000000	

INF -0.761980 -0.102836 -0.093672 1.000000

Source: Researcher Computation 2020.

The result of correlation matrix presented in table 1, was used to measure nature of relationship between study variables. The result shows weak and positive relationship among exchange rate, gross domestic product, and external reserve. However, negative and strong relationship was achieved between inflation and external reserve in Nigeria. The implication of this is that, an increase in Exchange Rate and Gross Domestic Product will lead to minimal increase in External Reserves while an increase in Inflation will lead to fall in External Reserves. The matrix further used for the pre-test of multi-colliearity among the explanatory variables. The correlation matrix for the macroeconomic variables indicates that the variables are not characterized with the problem of multi-collinearity since the correlation matrix values are less than 70%. This implies there is no presence of multi-collinearity in the study model.

Table 2: Summary of Unit Root Test

Variables	Augmented Dickey-Fuller (1980)			Phillips-Peron (1990)			
	t-stat	5% sig level	Order of integration	t-stat	5% sig level	Order of integration	of integration
EXR	4.269272	2.951125	1(1)	4.238722	2.951125	1(1)	
EXCH	3.498595	2.967767	1(1)	3.558035	2.967767	1(1)	
GDP	6.259388	2.954021	1(1)	6.233798	2.954021	1(1)	
INF	4.461123	2.967767	1(1)	4.230572	2.967767	1(1)	

Source: Researcher Computation, 2020

Due to volatility nature of time series variables, it’s important to carry out unit root test in other to check for the present or absence of unit root in variables. Conversely, in case where the ADF/PP test statistics is greater than the critical value indicates rejection of the null hypothesis implying the stationary or absence unit root of the time series variables. Table 2 shows the unit root tests of the variables using both Augmented Dickey-Fuller (ADF) tests and Phillips-Perron test. The hypothesis in the series has a unit root with none and with trend. In both cases, we can clearly accept the null hypothesis that the variables have a unit root at their first difference

1(1). This indicates that all the variables are stationary at first difference 1(1), which is a precondition to use Vector Error Correction Model (VECM) to test for long-run relationship (Osuala, 2010). The order of lags on the first differenced variables are obtained from the unrestricted models by using the Akaike Information Criterion (AIC). Akaike's Information Criterion (AIC) provides the best fit for VECM model to a set of data. The model with the smallest value of the AIC is judged to be the most appropriate. The AIC revealed that the best fit for the model is an AR (1). This implied that the study would use lag (1), which is the lowest value for each criterion in its chosen VAR lag length. Thus, the study proceeded to the test of long run relationship among the variables using Johansen Co-integration Test.

Table 3: Johansen Co-integration

Trace Test			Maximum Eigen Test		
T-statistic	95% Critical Value	P-value	T- statistic	95% Critical Value	P-value
66.13633	47.85613	0.0004**	33.15928	27.58434	0.0086**
32.97705	29.79707	0.0208**	23.76301	21.13162	0.0208**
9.214046	15.49471	0.3460	6.720156	14.26460	0.5227
2.493890	3.841466	0.1143	2.493890	3.841466	0.1143

Source: Researcher Computation 2020

The result of the long run relationship is presented in table 3. It is indicated that there exist (2) two co-integration vector among the variables as revealed by both the Trace Test and Maximum Eigen Test. This implies that there is a long run equilibrium relationship among the variables and in the long run the explanatory variables namely Exchange Rate, Gross Domestic Product and

Inflation can accurately predict External Reserves in the long run.

Table 4: Error Correction Estimate Result

Variables	Coefficient	Std. error	t-statistics	P-value
ECT(-1)	-0.320919	0.042665	-7.521832	0.0000*
DLOG(EXR(-1))	0.340092	0.124674	2.727852	0.0104*
DLOG(EXCH)	0.151769	0.048509	3.128677	0.0000*
DLOG(EXCH(-1))	-0.032884	0.013081	-2.513875	0.0481*
DLOG(GDP)	1.586460	0.244560	6.486990	0.0000*
DLOG(GDP(-1))	1.030695	0.445345	2.314375	0.0471*
DLOG(INF)	-0.069075	0.057755	-1.196000	0.9042
DLOG(INF(-1))	-0.076787	0.176400	-0.435301	0.9815
R-squared	0.558151			
Adjusted R ²	0.492977			
F-statistic	21.52679			
Prob(F-statistic)	0.0000			
Durbin-Watson stat	2.087699			

Note: *Significant @5%

Table 4 presents the result of the Error Correction Estimate and it is indicated that there is speed of adjustment from short run to long run state. The Error Correction Term of -0.320919 indicates that any deviation in the model in the short run will be corrected at 32.09% in the long run. The Error Correction Term has the expected negative sign and significant at 5%.

The result of the analysis indicates that first period lag of External Reserves has positive and significant effect on External Reserves indicating that an increase in External Reserves in the previous year will lead to about 34% increase in External Reserves in the current year. The findings implied that, trends of the inflow of foreign exchange reserves are positively and significantly correlated. Furthermore, it indicates that Exchange Rate has negative and significant effect on External Reserves. The negative sign of the coefficient implies that any increase in Exchange Rate will lead to fall in External Reserves. This finding supports the findings of Aizenman *et al* (2012) and Ajibola *et al* (2015) but has not agree with that of

Umeora (2013). This is an indication that appreciation and instability in exchange rate will lead to decline in External Reserves.

The result indicates a positive and significant relationship between first period lag of Gross Domestic Product and External Reserves. This implies that an increase in previous year Gross Domestic Product will lead to 103% increase in External Reserves. This implies that positive economic growth will attract more investment and increase government income, which will lead to an increase in the country external reserve. This corroborates the study of (Umeora, 2013; Alasan and Shaib, 2011; Akinwunmi and Adekoya, 2016; Tariq *et al*, 2014), but in contrast to that of (Opata & Ogunleye, 2010). Finally, first period lag of Inflation is indicated to have negative but insignificant effect on External Reserves. This finding shows that an increase inflationary pressure will lead to 7.6% decrease in Nigeria external reserve as supported by

Umeora (2013), indicating that inflationary pressure erodes the value of the country's currency thus, and leading to fall in External Reserves.

The R-squared of 0.558151 implies that 55.81% variation in External Reserves result from changes in Exchange Rate, Gross Domestic Product and Inflation while 44.19% variations in External Reserves are captured in the Error Term. The F-statistic value of 21.52679 and its corresponding probability value of 0.0000 indicates that there is significant relationship between

External Reserves and Exchange Rate, Gross Domestic Product, and Inflation. Also, the adjusted

R-squared value 0.492977 with p-value of 0.0000 indicates that the explanatory variables explained about 49.29% variation in outcome variable, while the remaining 0.507133 are explained by other factors that are not captured in the study model.

Table 5: Diagnostics

Diagnostics test	Observed value	P-value (Chi-square)
Normality Test	11.09	0.0905
Breusch-Godfrey LM test for autocorrelation	0.50710	0.4311
Ramsey RESET test of Omitted Variables	1.38	0.2876
Variance Inflation Factor test of multicolliaerity	Mean value 4.21	
Breusch-Pegan test of Heteroscedaticity	2.01	0.7861

Source: Researchers Computation, 2020

The result of residual test was presented in the table 5. The Ramsey RESET was carried out to check for the present of omitted or additional variables in the study model. The p-value of 0.2878 is greater than 5% significance level. This study therefore fails to reject the null hypothesis that no omitted or additional variables and then model if well specified. Breusch-Godfrey Lagrange Multiplier test (LM) was also carried out to check for the presence of first order serial autocorrelation. The presence of autocorrelation is capable of inflated standard error and affects the validity of test statistics, which could lead to type I or II error. The result is not significant given the p-value of 0.4311 greater than 5% conventional level. This implies that there is absence of serial autocorrelation in the study. Test of multi-collinearity was further carried out using Variance Inflation Factor (VIF). The presence of multicollinearity would affect the regression coefficient and this is capable to violate the Best Unbiased Linear Estimator (BLUE) assumption. The value of all the predictor variables pegged at 4.21. This implies the absence of multicollinearity. The result of Breusch-pegan test shows the absence of heteroscedaticity. Meaning that error varies across the residuals are homogeneously distributed. Finally, normality test reveals that residual of the regression is normally distributed.

5. Conclusion

This study examines the relationship between external reserves and exchange rate in Nigeria. The results show that exchange rate has significant effect on the Nigerian reserves position

pointing to the misalignment in the Nigerian exchange rate. The implication of this is that exchange rate appreciation will result in the outflow of reserves in order to appreciate exchange rate. Also, gross domestic product has positive and significant effect on external reserves. The economic implication of this is that, continuous increase in domestic productivity will lead to accumulation in reserves through increase in export. Also, the result indicates that inflationary pressure erodes the value of naira thereby worsening the reserves position of the country. This study concludes that exchange rate is negative and significantly related to external reserves resulting from the outflow of foreign reserves to control undue depreciation of the exchange rate. It is thus recommended that, exchange rate should be adequately managed in order to strengthen the nation's currency against other currencies of the world. Also, there is need to control inflationary pressure in the economy which has continued to dampen the value of the currency through the adoption of effective monetary policy. Finally, government should embark on massive infrastructural investment and policy that will enhance domestic productivity thereby leading to increase in export led growth and boosting of foreign exchange reserves.

References

- Aizenman, J., Riera-Crichton, D., & Edwards, S. (2012). The Role of Exchange Rate and International Reserves Policies. *Journal of International Money and Finance* 31 (8), 1990- 2016.
- Ajibola, I.O., Udoette, U.S., Omotosho, B.S. & Rabia, R. (2015). Nonlinear Adjustments between Exchange Rates and External Reserves in Nigeria: A Threshold Co-integration Analysis. *CBN Journal of Applied Statistics*, 6(1), 111-132.
- Akinwale, S.O., Solawon, M.D., Adekunle, E.O. & Obagunwa, T.O. (2018). Exchange rate Devaluation and Balance of Trade in Nigeria: An Error Correction Model Approach. *International Journal of Innovative Research & Development*, 7(8), 137-143.
- Akinwunmi, A.A., & Adekoya, R.B. (2016). External Reserves Management and its Effect on Economic Growth of Nigeria. *International Journal of Business and Finance Management Research*, 4, 36-46.
- Alasan, A.B., & Shaib I.O. (2011). External Reserves Management and Economic Development in Nigeria. *European Journal Business and Management*, 3(11), 1-7.

- Benigno, J., & Fornaro, L. (2012). Reserve Accumulation, Growth and Financial Crises. CEPR Discussion Papers, Centre for Economic Performance, LSE.
- CBN, (2007). Building and Managing External Reserves for Economic Development. *The CBN Bullion*, 31(2), 24-36.
- Domniguez, K.M. (2019). Emerging Markets Exchange Rate Policies Stabilizing or Manipulations. Being a Paper presented at the NBER Conference, University of Michigan
- Fapetu, O., & Oloyede, J A. (2014). Foreign Exchange Management and the Nigerian Economic Growth. *European Journal of Business and Innovative Research*, 2(2), 19-31.
- Gokhale, M.S., & Raju, R. (2013). Causality Between Exchange Rate and Foreign Exchange. *Global Journal of Management and Business Research*, 1-12.
- GÜRD (2012). Threshold Granger Causality Test to Examine the Relationship between Exchange Rate and External Reserves in Turkey: *Journal of Economics* 3(1), 3-18
- IMF (2009). International Monetary Fund, Annual Report. Available online at:
www.imf.org/external/pubs/ft/ar/2009/eng/pdf/a1.pdf
- Ito, H. & Mccauley R. (2019). The Currency Composition of Foreign Exchange Reserves. BIS Working Papers 828.
- Kruskovic, B.D., & Maricic, D. (2015). Empirical Analysis of the Impact of Foreign Exchange Reserves to Economic Growth in Emerging Economics. *Applied Economics and Finance*, 2(1), 102-109.
- Nwachkwu, N.E., Ali, A.I, Abdullahi, I.S., Shettima, M.A., Zirra, S.S., Falade, B.S. & Alenyi, M.J. (2016). Exchange Rate and External Reserves in Nigeria: A Threshold Cointegration Analysis. *CBN Journal of Applied Statistics*, 7(1), 233-254.
- Odili, O. (2015). Real Exchange Rate Volatility, Economic Growth and International Trade in an Emerging Market Economy: Evidence from Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 5(7), 171-201.
- Oputa, N.C., & Ogunleye, T.S. (2010). External Reserves Accumulation and the Estimation of the Adequacy level for Nigeria. *Economic and Financial Review*, 48(3), 1-29.
- Osuji, C.C., & Ebiringa, O.T. (2012). Analysis of Effect of External Reserves Management on Macroeconomic Stability of Nigeria. *International Journal of Business Management and Economic Research* 3(6), 646-654.
- Schanz J. (2019). Foreign Exchange Reserves in Africa, Benefits, Costs and Political Economy Considerations. *BIS Paper*, 105.
- Tariq, M., Haq, Z., Jan, S., Jehangir, M., & Aamir, M. (2014). Real Exchange Rate and Foreign Exchange Reserves: A Mercantilist View. *Life Science Journal*, 11(3), 160-174.
- Udo, A.B., & Antai, A.S. (2014). Opportunity Cost of Nigeria's External Reserves. *Journal of Economics and Finance*, 3(5), 7-16.
- Umeora, C.E. (2013). Foreign Exchange Reserves Accumulation and Macro-economic Stability: The Nigerian Experience. *International Journal Business Management & Investment*, 2(9), 150-157.

