EXCHANGE RATE FLUCTUATION AND ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL INVESTIGATION.

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Abstract

  The study investigated the impact of exchange rate on economic growth in Nigeria. Annual time series data were obtained from the Central Bank of Nigeria Statistical Bulletin for the period 1986 to 2018 on the variables used for the study. Unit root test was conducted using Augmented Dickey-Fuller test technique and the result showed that the variables were stationary though at different levels. Co-integration test was also conducted using Johansen co-integration test method and the result showed that the variables in the model were co-integrated meaning that the variables have a long run relationship. The regression result showed that exchange rate, consumer price index and money supply have a positive and significant impact on the economic growth of Nigeria The R-squared value showed that about 99.7 % of the total variations in the dependent variable was explained by changes in the explanatory variables The error correction result showed that the speed of adjustment to long run equilibrium is 66.15 percent when any past deviation must be corrected in the present period. The result of the granger causality test showed that there is a unidirectional relationship between exchange rate and economic growth, unidirectional relationship between consumer price index and economic growth and unidirectional relationship between money supply and economic growth. Based on the findings it was recommended that government should ensure that serious efforts are being made to stabilize exchange rate. Moreover, government should formulate and implement policies that will boost the productive capacity of the economy

Keywords*:* Exchange rate, Money supply, devaluation, Economic growth.

1.1 Introduction:

 Exchange rate is the price of one currency in relation to another. In a slightly different perspective, it expresses the national currency's quotation in respect to foreign ones. Thus, exchange rate is a conversion factor, a multiplier or a ratio, depending on the direction of conversion (Jseef et.al 2005). Onuora and Osuji (2014) defined exchange rate as the value of one currency (the domestic currency) in relationship of another (foreign currency). It can also be defined as the price at which one unit of a country's domestic currency exchanges for any other country in the world. Anyanwu and Oaikhenan (1995) defined as exchange rate as the price of

one currency (the domestic currency) in terms of another (the foreign currency). Dimoji et.al (2013) see exchange rate as the rate at which one currency is exchanged for another. Jhingan (2006) argued that it is customary to define the exchange rate as the price of one unit of the foreign currency in terms of the domestic currency. The major types of exchange rates are spot rate, forward rate, long rate, fixed rate, flexible rate and multiple rate and two-tier rate system (Paul, 2004). The price of foreign currency in terms of local currency is actually very important in understanding the growth of all the countries as there are strong evidence to show that there abounds strong alignment between exchange rate and growth of per capita output in developing nations (Idris et. al 2019).

1.2 Statement of problem

Nigeria have adopted different exchange rate regimes and reforms so as to achieve macroeconomic stability and sustained economic growth. Unfortunately, these different exchange rate regimes and reforms adopted by the Nigerian monetary authorities have not been able to generate a meaningful growth as Nigeria's economy is still experiencing some elements of instability. The study therefore seeks to investigate the impact of exchange rate fluctuation on economic growth in Nigeria.

1.3 Objectives of the study

The broad objective of the study was to investigate the impact of exchange rate fluctuation on the economic growth of Nigeria. The specific objectives of the study were:

(i)   To investigate the impact of exchange rate on economic growth in Nigeria.
(ii) To examine the impact of consumer price index on economic growth in Nigeria.
(iii) To investigate the impact of money supply on economic growth in Nigeria.

1.4 Hypothesis of the study:

In order to guide the study, the following null hypotheses were formulated:

HO_1: Exchange rate does not have any impact on economic growth in Nigeria.
HO_2: Consumer price index does not have any impact on economic growth in Nigeria.
HO_3: Money supply does not have any impact on economic growth in Nigeria.

2.0 LITERATURE REVIEW

2.1 Theoretical literature

2.1.1 Mint parity theory: this theory explains the determination of exchange rate between two gold standard countries. In a country on gold standard, the currency is either made of gold or its value is expressed in terms of gold. According to this theory, the exchange rate under gold standard is equivalent to the gold content of one currency relative to that of another. This exchange rate is also known as mint rate. A country is said to be on gold standard if the following conditions are satisfied: (a) the standard monetary unit is defined in terms of gold, that is, either it is made of gold of given purity and weight, or it is convertible into gold at fixed rate. (b) the government buys and sells gold in unlimited quantity at officially fixed price. (c) there are no restrictions on the export and import of gold. The mint parity states that under gold standard, the exchange rate tends to stay close to the ratio of gold values or the mint parity or par. In other words, the rate of exchange between the gold standard countries is determined by the gold equivalents of the concerned currencies (Paul, 2004).

2.1.2 The balance of payments theory: According to this theory, under free exchange rates, the exchange rate of the country depends upon its balance of payments. A favourable balance of payments raises the exchange rate while an unfavourable balance of payments reduces the exchange rate. Thus, the theory implies that the exchange rate is determined by the demand for and supply of foreign exchange. The demand for foreign exchange arises from the debit side of the balance of payments. It is equal to the value of payments made to the foreign country for goods and services purchased from it plus loans and investments made abroad. The supply of foreign exchange arises from the credit side of the balance of payments. It equals all payments made by the foreign country to our country for goods and services purchased from us plus loans disbursed and investments made in this country. The balance of payments balances if debits and credits equal. If debits exceed credits the balance of payments is unfavourable. On the contrary, if credits exceed debits, it is favourable. When the balance of payments is unfavourable, it means that the demand for foreign currency is more than its supply. This causes the external value of the domestic currency to fall in relation to the foreign currency. Consequently, the exchange rate rises. When the exchange rate falls below the equilibrium exchange rate in a situation of adverse balance of payments, exports increase and the adverse balance of payments is eliminated and the equilibrium exchange rate is reestablished. Thus, at any point of time the rate of exchange is determined by the demand for and the supply of foreign exchange as represented by debit and credit side of the balance of payments. (Jhinghan, 2006).

2.1.3 Purchasing power parity theory: This theory explains the determination of exchange rate and its fluctuations when the countries are on inconvertible paper standard. The theory was first propounded by Wheatley in 1802, but the credit for properly developing the theory in the present form goes to Gastav Cassel who gave its systematic statement in 1918. The theory is based on the fundamental principle that the different currencies have purchasing powers in their respective countries. A country is said to be on inconvertible paper standard when (a)money is made of paper or some cheap metals and its face value is greater than its intrinsic value; (b) the money is not convertible into gold; (c) the purchasing power of money is maintained at par with that of gold or any other commodity; (d) the currency may not be fully backed by gold or other metallic reserves; (e) the currency system is not nationalistic in the sense that there is no link between the different paper currency systems adopted by different countries. Under such conditions, the rate of exchange between the two currencies must equalise the purchasing power of both the countries (Paul, 2004).

2.2 Conceptual literature

Hodgson and Herander (1983) defined exchange rate as the rate at which one currency trades for another on the foreign exchange market. Jinghan (2016) sees foreign exchange rate as the rate at which on currency is exchanged for another. It is the price of one currency in terms of another. A foreign exchange rate is simply the price of one currency in terms of another. Since there is an essential symmetry between the two currencies, the exchange rate may be defined in one of the two ways: as the amount of the foreign currency that may be bought for 1 unit of the domestic currency, or as the cost in domestic currency of purchasing 1 unit of the foreign currency (Sodersten and Reed, 1994; Okafor and Obasi, 2011). According to Bade and Parkin (2004), foreign exchange rate is the price at which one currency exchanges for another.

Exchange rate can be determined in two ways: Fixed exchange rate and floating exchange rate. Fixed exchange rate also known as pegged exchange rate is the rate that a government, through its central bank, sets and maintains as the official exchange rate. A set price will be determined against a major world currency. In order to maintain the local exchange rate, the central bank buys and sells its own currency on the foreign exchange market in return for the currency to which it is pegged (Dimoji et al, 2013). Jhingan (2006), argued that under fixed or

pegged exchange rates, all exchange transactions take place at an exchange rate that is determined by the monetary authority. It may fix the exchange rate by legislation or intervention in currency markets. It may buy or sell currencies according to the needs of the country or may take policy decision to appreciate or depreciate the national currency. According to Dimoji et at, 2013 a floating exchange rate is determined by the private market through the forces of supply and demand. A floating exchange rate is often termed 'self-correcting' as any differences in supply and demand will automatically be corrected in the market. Jhinghan (2010), is of the opinion that flexible or floating exchange rate are determined by market forces. The monetary authority does not intervene for the purpose of influencing the exchange rate. Under a regime of freely fluctuating exchange rates, if there is an excess supply of a currency, the value of that currency in foreign exchange markets will fall. It will lead to depreciation of exchange rate. Consequently, equilibrium will be restored in the exchange market. On the other hand, shortage of currency will lead to appreciation of exchange rate thereby leading to restoration of equilibrium in the exchange market. These market forces operate automatically without any intervention on the part of monetary authority.

Mankiw (2008), have argued that nominal exchange rate is the rate at which a person can trade the currency of one country for the currency of another while real exchange rate is the rate at which a person can trade the goods and services of one country for the goods and services of another.

2.3 Empirical literature

Onuorah and Osuji (2014), examined exchange rate and the economic growth in Nigeria. The data for the study was collected from Central Bank of Nigeria (CBN) statistical bulletin and World Bank statistical data base. The study adopted the Ordinary Least Square (OLS) method of estimation for data covering the period between 2000 and 2010. The results from the econometric analyses showed that there is a short-run relationship between exchange rate, inflation rate, interest rate and GDP. The result obtained from the unit root analysis indicates at least one time series variable property is stationary. The study concluded that in Nigeria, the factors that influence the level of growth rate are extent of Exchange rate and its variables. Based on the findings, from the granger causality investigation procedure at 5% critical value are EXR, INTR, INFR, IMPT and EXPT among other variables affects economic growth. The study recommends the need to be technological incline in all sectors of Nigerian's economy, excess and over budgetary inflation and implementation should be cut to barest minimal level to avert the ideal of external borrowing which most consequently result in external debt and services. The Nigerian government should tow to the path of redirecting its investment profile by channeling it towards capital projects of the government.

Mori et. al. (2014), attempted to investigate the effects of the exchange rates on economic growth in Malaysia using time series data spanning from 1971 to 2009. Both exchange rates, nominal and real, are considered to have similar effects on economic growth. The results of ARDL bounds test suggest that long-run cointegration exists between both nominal and real exchange rates and economic growth with a significant positive coefficient recorded for real exchange rate. In addition, the results of ECM-based ARDL also reveal that both exchange rates have a similar causal effect towards economic growth. Considering the importance of exchange rate variables, especially the real term. These findings eventually suggest that a systematic exchange rate via monetary policy should be properly developed to promote the stability and sustainability of economic growth in Malaysia.

Thomas et. al (2010), examined the impact of real exchange rate on savings rate and economic growth. The study explores the savings transmission mechanism through which such a link can take place in the country. The results showed that real effective exchange rate (REER)

volatility has adverse effects on economic performance. Contextually, an appreciated REER is significantly and positively correlated with economic growth, reflecting Malawi's net-importer position. On the other hand, REER volatility is significantly and negatively correlated with growth, reflecting investors' preference for a stable exchange rate. With regard to savings, the study finds that appreciation of the REER (or nominal exchange rate) would encourage savings. The study also finds that devaluation of the REER has an insignificant effect on economic growth in the long-run. The negative impact of real exchange rate volatility on economic growth suggests that eliminating real exchange rate volatility can have strong growth-enhancing effects. Government has a variety of instruments at their disposal to influence the level, and reduce the volatility of the real exchange rate. The options include currency intervention (building up foreign exchange reserves) and eliminating institutional and market failures.

Babatunde et.al (2016), focused on the nexus between exchange rates and economic growth in Nigeria over the period of 1978 to 2014. The study analyzed the data for Nigeria using ordinary least square (OLS) method and found out that exchange rates positively and significantly influences economic growth and vice versa. The study revealed the non-spuriousness of the regression via the stationarity of the residuals. Cointegration technique employed also showed the long-run equilibrium among the series used. The short-run directional relations were established between the exchange rates and economic growth in the country via Pairwise granger causality tests. Thus, the study concludes that exchange rates and economic growth influenced by one another. Therefore, it was recommended that efforts should be made to ensure exchange rate stability in order to stabilize the country's economy.

Abu (2010), investigated the impact of the real effective exchange rate on economic growth in Sierra Leone. The study developed an analytical framework to identify the determinants of the real effective exchange rate. Using quarterly data and employing recent econometric techniques, the relationship between the real effective exchange rate and economic growth was investigated. A bivariate Granger causality test was also employed as part of the methodology to examine the causal relationship between the real exchange rate and economic growth. The empirical results of the study suggested that the real effective exchange rate correlates positively with economic growth, with a statistically significant coefficient. The results also indicated that monetary policy is relatively more effective than fiscal policy in the long run, and evidence of the real effective exchange rate causing economic growth was profound. In addition, the results showed that terms of trade, exchange rate devaluation, investment to GDP ratio and an excessive supply of domestic credit were the main determinants of the real exchange rate in Sierra Leone.

Benjamin (2019), examined the impact of exchange rate volatility on economic growth in Nigeria. The study employed the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model and the system Generalized Method of Moments (GMM) technique to analyse the time series data from the period January 1980 to December 2017. The study used the Augmented Dickey–Fuller and Philips–Perron tests to determine the presence of a unit root and the Johansen co-integration test to establish the relationship among the variables in the study. The results of the estimates of the study offer evidence that exchange rate volatility persists throughout the study period, and has a negative and significant effect on the economic growth of Nigeria. This result suggested that excessive volatility due to low inflows is inimical to the growth of the Nigeria economy. The findings of the study demonstrated a negative and significant relationship between inflation and economic growth. Moreover, while credit to the private sector and crude oil prices exerts positive and significant relationship with growth, the

relationship between money supply, trade openness and government expenditure and economic growth is positive. The study recommends that government should pursue policies and programs that would help ensure exchange rate stability and boost local production for both consumption and export.

Long et.at (2017), investigated the impact of exchange rate on economic growth in Cambodia for the period 1995 -2017. The study used variables such as gross domestic product (GDP) indicating Cambodia's economic growth, as well as some explanatory variables such as exchange rate (EXR), broad money supply (M2), and openness to trade (TOP), rate of inflation (IFR) and foreign direct investment (FDI). The study used an ordinary least squares (OLS) regression model to estimate the effects of exchange rate on Cambodia's economic growth. The data used in the study was downloaded from the world bank database. The result of the study showed that the impact of exchange rate (EXR) and openness to trade (TOP) on GDP is 1%. Exchange rate is positively correlated with GDP, while trade openness is negatively correlated with GDP. During the period of study. Other variables such as broad money (M2), inflation rate (IFR), and foreign direct investment (FDI) possess no significant effect on Cambodia's GDP.

3.0 Methodology
Multiple regression analysis was used in the study. Time series data spanning from 1986 being the year flexible exchange rate regime was introduced to 2018 was sourced from the Central Bank of Nigeria statistical bulletin. The data was analysed using E-views 9

3.1 Model specification
In order to investigate the impact of exchange rate fluctuation on the economic growth of Nigeria, the model for this study was specified thus;

GDP = f (EXR, CPI, MS2) …. (1)

Where:

GDP   = Gross Domestic Product (proxy for economic growth)

EXR   =   Exchange rate

CPI   =   Consumer Price Index

MS2   =   Broad money supply

The model in its econometric linear form can be written as:

$GDP = b_0 + b_1EXR + b_2CPI + b_3MS2 + U$ …… (2)

U = stochastic or random error term

bo = constant intercept

$b_1 – b_3$ = coefficients of associated variables

The model in the log linear form can be expressed as:

$LogGDP = b_0 + b_1LogEXR + b_2LogCPI + b_3LogMS2 + U$ --(3)

Where:

Log = natural logarithm

The theoretical expectations about the signs of the coefficients of the parameters are as follow:
$b_1<0, b_2<0, b_3>0$.

The Augmented-Dickey Fuller (ADF) unit root test was employed to ensure data stationarity and avoid the problem of spurious regression since the data for the analysis is time series. The Johansen test for co-integration was also employed to investigate whether there is existence of long run relationship among the variables in the model.

Table 1: Unit root test result

Variables	ADF test statistic	5% critical value	Order of integration
GDP	-3.810420	-3.562882	1(1)
EXR	-5.818215	-2.960411	1(1)
CPI	-3.759646	-2.960411	1(1)
MS2	-4.983777	-3.562882	1(1)

Source: Author's computation

The unit root test result presented on table 1 showed that GDP, EXR, CPI and MS2 are all stationary at first difference because their various ADF test statistic were greater than their 5% critical values in absolute terms.

Table 2: Johansen co-integration test result

Sample (adjusted): 1988 2018
Included observations: 31 after adjustments
Trend assumption: Linear deterministic trend
Series: GDP EXR CPI MS2
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.667911	69.78369	47.85613	0.0001
At most 1 *	0.413775	35.61074	29.79707	0.0095
At most 2 *	0.381366	19.05513	15.49471	0.0139
At most 3 *	0.125794	4.167618	3.841466	0.0412

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.667911	34.17295	27.58434	0.0062
At most 1	0.413775	16.55562	21.13162	0.1940
At most 2 *	0.381366	14.88751	14.26460	0.0398
At most 3 *	0.125794	4.167618	3.841466	0.0412

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
Source: Computer analysis using E-views

The trace test indicates that there are 4 co-integrating equations at 0.05 levels while Mac-eigenvalue test also indicates that is 1 co-integrating equation at 0.05 levels. All these results showed that the variables are co-integrated. That is, GDP has a long run relationship with EXR, CPI and MS2.

Table 3. Ordinary Least Square (OLS) Result

Dependent Variable: LOG(GDP)
Method: Least Squares
Sample: 1986 2018
Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.859241	0.089445	31.96665	0.0000
LOG(EXR)	0.058563	0.026921	2.175422	0.0379
LOG(CPI)	0.406727	0.102807	3.956209	0.0005
LOG(MS2)	0.632369	0.068879	9.180818	0.0000

R-squared	0.996638	Mean dependent var		9.053496
Adjusted R-squared	0.996290	S.D. dependent var		2.045838
S.E. of regression	0.124605	Akaike info criterion		-1.214124
Sum squared resid	0.450266	Schwarz criterion		-1.032729
Log likelihood	24.03304	Hannan-Quinn criter.		-1.153090
F-statistic	2865.747	Durbin-Watson stat		1.409192
Prob(F-statistic)	0.000000			

Source: Computer analysis using E-views 9

From the results of the OLS, the constant parameter (Bo) is positive at 2.859241 implying that if all the explanatory variables are held constant, GDP as a dependent variable will on the average increase by 2.859241 percent. For EXR, the coefficient is 0.058563. This means that EXR is positively related to GDP implying that on the average, one percent increase in EXR will lead to 0.058563 percent increase in GDP and this is not in conformity to the aprori expectation. The t-value of exchange rate (EXR) is 2.175422 with the probability value of $0.0379 < 0.05$ (level of significance) shows that exchange rate (EXR) has a significant impact on gross domestic product (GDP) in Nigeria within the period under study. The result also showed that the coefficient of CPI is 0.406727 implying that there is a positive relationship between CPI and GDP and this is contrary to the aprori expectation. The result showed that on the average, one percent increase in CPI will lead to 0.406727 percent increase in GDP. The t-value of CPI is 3.956209 with the probability value of $0.0005 < 0.05$ (level of significance) shows that CPI has a significant impact on gross domestic product (GDP) in Nigeria within the period under study. The result equally showed that the coefficient of MS2 is 0.632369 meaning that there is a positive relationship between MS2 and GDP and this is in conformity to the aprori expectation. From the result, one percent increase in MS2 will on the average lead to 0.632369 percent increase in GDP. The t-value of MS2 is 9.180818 with the probability value of $0.0000 < 0.05$ (level of significance) shows that MS2 has a significant impact on gross domestic product (GDP) in Nigeria within the period under study. The R-squared value of as 0.996638 showed that about 99.7 % of the total variations in the dependent variable (GDP) were explained by changes in the explanatory variables (EXR, CPI, and MS2). The F-statistic of 2865.747 with the corresponding probability value of 0.000000 measured the adequacy of the regression model and the overall influence of EXR, CPI and MS2 on GDP. Since $P = 0.000000 < 0.05$ (level of significance), the model was a good fit and the explanatory variables (EXR, CPI and MS2) jointly exerted a statistically significant effect on the dependent variable (GDP). The Durbin-Watson value of 1.409192 shows the presence positive of autocorrelation

Table 4 Error Correction Result
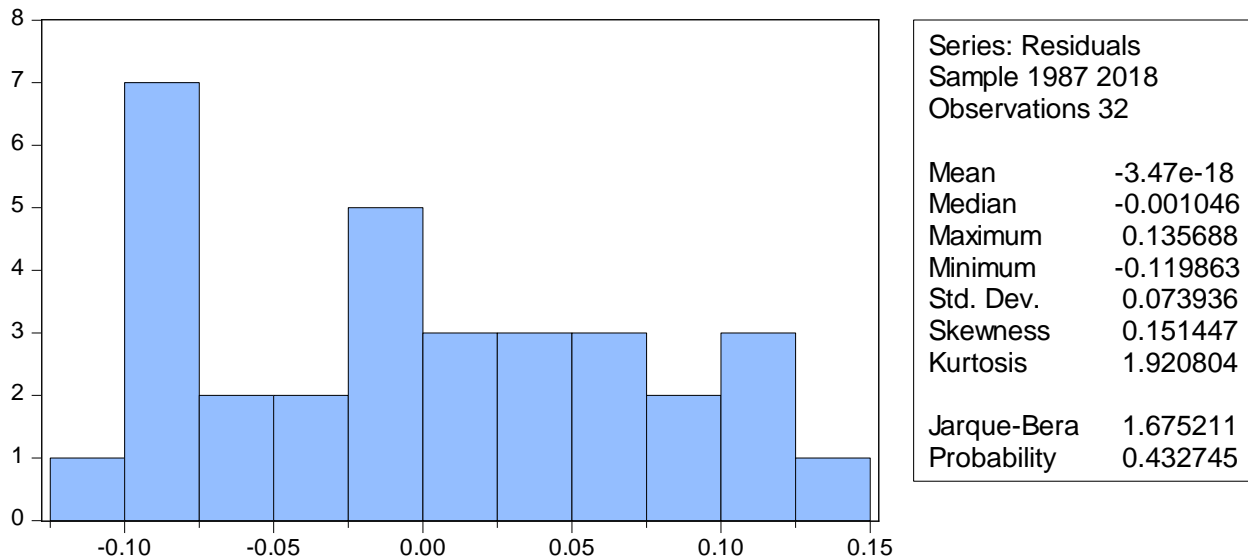Dependent Variable: DLOG(GDP)

Method: Least Squares
Sample (adjusted): 1987 2018
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.092003	0.030951	2.972529	0.0061
DLOG(EXR)	0.046663	0.024258	1.923636	0.0650
DLOG(CPI)	-0.082794	0.093805	-0.882621	0.3852
DLOG(MS2)	0.561928	0.140995	3.985438	0.0005
ECM(-1)	-0.661488	0.162086	-4.081094	0.0004

R-squared	0.489630	Mean dependent var	0.201484
Adjusted R-squared	0.414019	S.D. dependent var	0.103493
S.E. of regression	0.079223	Akaike info criterion	-2.090493
Sum squared resid	0.169461	Schwarz criterion	-1.861471
Log likelihood	38.44788	Hannan-Quinn criter.	-2.014578
F-statistic	6.475694	Durbin-Watson stat	1.223424
Prob(F-statistic)	0.000867		

Source: Computer analysis using E-views 9

In the error correction result as shown on table 4, the error correction term ECM (-1) is correctly specified. It is negative and statistically significant. This means that it will be effective to correct any deviations from the long-run equilibrium. Moreover, the negative and statistically significant of the ECM confirms that the variables in the model are co- integrated The coefficient of the ECM(-1) which is -0.661488 indicates that the speed of adjustment to long run equilibrium is 66.15 percent when any past deviation must be corrected in the present period. The coefficient of determination (R^2) in error correction is 0.489630. This means that about 48.96 percent of the variations in the dependent variable (GDP) are explained jointly by changes in the explanatory variables in the model. The F-statistic of 6.475694 with probability of 0.000867 (<0.05) is significant. This means that the explanatory variables in the model (EXR, CPI and MS2) are jointly significant. The result showed EXR and MS2 have positive relationship with the dependent variable (GDP) while CPI has a negative relationship and they were also not statistically significant except MS2 that was statistically significant.

Table 5: Normality Test Result

Series: Residuals		
Sample 1987 2018		
Observations 32		
Mean		-3.47e-18
Median		-0.001046
Maximum		0.135688
Minimum		-0.119863
Std. Dev.		0.073936
Skewness		0.151447
Kurtosis		1.920804
Jarque-Bera		1.675211
Probability		0.432745

Source: computer analysis using E-views 9

Table 5 above, shows that there exists normal distribution of the residuals as the probability (0.432745) of Jaque-Bera statistics is greater than 5%. This is encouraging as it exposes that our OLS estimates are unbiased, t-statistics and confidence intervals are robust as well as prediction intervals.

Table 6: Pairwise Granger Causality Tests Result

Pairwise Granger Causality Tests
Sample: 1986 2018
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LOG(EXR) does not Granger Cause LOG(GDP)	31	0.58254	0.5656
LOG(GDP) does not Granger Cause LOG(EXR)		3.68888	0.0389
LOG(CPI) does not Granger Cause LOG(GDP)	31	4.00500	0.0305
LOG(GDP) does not Granger Cause LOG(CPI)		2.63086	0.0911
LOG(MS2) does not Granger Cause LOG(GDP)	31	4.86725	0.0160
LOG(GDP) does not Granger Cause LOG(MS2)		1.54903	0.2314

Source: Computer analysis using E-views 9

To determine the direction of causality between the variables, causality test was performed on the variables as indicated in table 6. A causality test states that if the probability value of the estimate is higher than (0.05) level of significance we accept the null hypothesis, and vice versa. The result of the granger causality test showed that exchange rate (LOG(EXR)) does not granger LOG(GDP) while LOG(GDP) granger cause exchange rate (LOG(EXR)) showing that there a unidirectional relationship between (LOG(EXR)) and LOG(GDP). The result also showed that LOG(CPI) granger cause LOG(GDP) while LOG(GDP) does not granger cause LOG(CPI) equally showing a unidirectional relationship between LOG(CPI) and LOG(GDP). The result also revealed that LOG(MS2) granger cause LOG(GDP) while LOG(GDP) does not granger

LOG(MS2) implying that there is a unidirectional relationship between LOG(MS2) and LOG(GDP).

Table 7: Cusum test of model specification
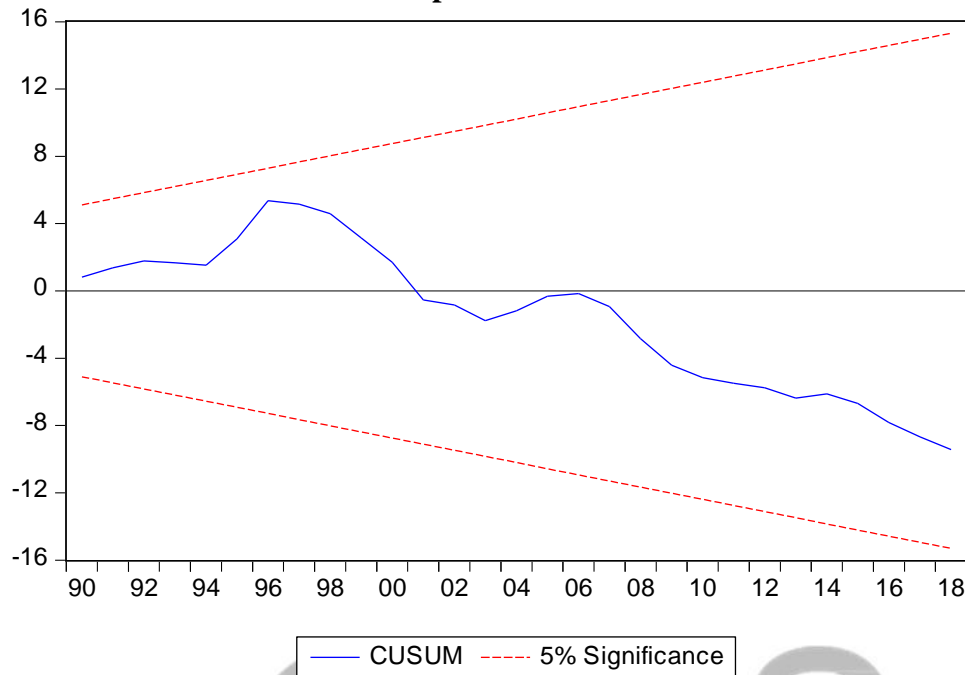
Source: computer analysis using E-views 9

To investigate the existence of a possible structural instability, the study used the Cusum test on table 7 and found that the cumulative sum remained within the area between the two critical lines showing that test did not detect any systematic eventual movements and that the coefficients values reflect structural stability.

4.1 Summary:

The study examined the impact of exchange rate fluctuation on the economic growth of Nigeria for the period 1986–2018 The short run regression result showed that all the explanatory variables: exchange rate (EXR), consumer price index (CPI) and broad money supply (MS2) have positive and significant effect on economic growth proxied by GDP. The joint effect of the explanatory variables on the dependent variable was statistically significant implying that these variables were considered important variables in explaining changes in economic growth proxied by GDP in Nigeria within the period of study. The modeled and operationalized framework of analysis exhibited a very high explanatory power, thereby providing supporting evidence that the explanatory variables included in the model were relevant in explaining changes in economic growth (GDP) in Nigeria within the period of study The result of the granger causality test showed that there is a unidirectional relationship between EXR and GDP, unidirectional relationship between CPI and GDP, unidirectional relationship between MS2 and GDP. The coefficient of the error correction indicates that the speed of adjustment to long run equilibrium is 66.15 percent when any past deviation must be corrected in the present period.

4.2 Conclusion: Given that the joint effect of the explanatory variables on the dependent variable were statistically significant, the study concludes that the explanatory variables

considered in this study were important variables in explaining economic growth in Nigeria within the period of study.

4.3 Recommendations:

The result of the study showed that there is a positive and significant relationship between exchange rate and economic growth. Government therefore should ensure that serious efforts are being made to stabilize exchange rate. Moreover, government should formulate and implement policies that will boost the productive capacity of the economy.

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