



## **Exchange Rate Fluctuations and Economic Growth in Nigeria: An Empirical Analysis**

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### **ABSTRACT**

This study investigates the relationship between exchange rate fluctuations and economic growth in Nigeria. Other specific objectives include: to find out the impact of inflation rate, interest rate and external reserve on growth of the economy. The ex-post facto research design technique was utilized. The data were obtained from the CBN Statistical Bulletin and Cointegration Error Correction Mechanism was adopted by analysing the data. The results obtained show that the exchange rate and interest rate were significant and negatively related to economic growth. Also, inflation rate and external reserve were significant but positively related to economic growth within the period covered by this study. It was therefore recommended that policy makers should not only rely on the manipulation of the macroeconomic variables to stem the tide of exchange rate fluctuations in the short run but go further to design policies that can bring about increase in production of goods and services in Nigeria. This will result in boosting the foreign exchange earnings that will ultimately improve the exchange rate of the local currency against other major currencies in the long run.

**Keywords:** Exchange Rate Fluctuations, External Reserve, Interest Rate, Inflation Rate and Economic Growth

**JEL Classifications:** F1, F2, F3, F4, O1

### **1. INTRODUCTION**

Exchange rate policy is anchored on the fact that countries all over the world are not equally endowed. This means that there has to be flow of goods and services from one country to another for the economy to run smoothly. One major objectives of macro-economic management is the desire to achieve a reasonable level of exchange rate stability. This will then engender, price stability, increased foreign direct investment, full employment and balance of payment equilibrium. However since independence, the Nigerian government has adopted several policies in the management of exchange rate so much so that one may begin to think that the inconsistencies in policy may have contributed to our present problem. For example, the wide gap between the inter-bank market rate and the parallel market prompted the federal authority to fully deregulate the foreign exchange market in March, 1992. This saw the Central Bank of Nigeria (CBN) intervention in buying

and selling of foreign exchange to force down the parallel market rate. By 1993 the official rate stabilized at N21.96k to the US dollar while the parallel market rate also stabilized at a rate which almost double the official rate. Once more the main motive of realizing efficient allocation of foreign exchange and stabilizing the naira exchange rate against the dollar failed and the depreciating naira continued a free fall (Onoh, 2010).

Having tried many policies without a solution, the federal authority decided in 1994 to revert back to fixed exchange rate for official transactions only. This policy had earlier been criticised by the Bretton Woods institutions to have contributed significantly to naira over valuation in the 70's. The exchange rate (EXR) of N21.96 to the Dollar which was in operation in 1993 was adopted for 1994 as the basis for official transaction while allocations to banks customers were based on exchange rate determined by market forces (Onoh, 2010). According to Okojie (2012). The

double exchange rate appeared to have temporarily solved the problem of discrepancy caused by earlier systems. Bank exchange rate was fairly stabilised in 1995 and 1996. With the attainment of an efficient management of EXR still far from being realized, the authorities once again decided to introduce a novel approach called the guided deregulation of EXR. Under this method, the Foreign Exchange dealings were liberalized to cater for operation of bureau de change. They were then permitted to purchase and sell various foreign exchange at autonomous determined rates (Ojo, 2012).

Due to the wide gap between the official EXR and that of the parallel market, the monetary authorities in 1999, merged the official EXR with the Autonomous Foreign Exchange Market (AFEM). By the end of 2005, the naira exchanged against the Dollar at a rate of N129.00 to US Dollar. This was not due to the productivity of the economy but mainly as a result of high crude oil price. According to the CBN governor, much of the appreciation was used in recovering the value of the naira. Again the last administration which ended in 2023 reverted back to the dual exchange rate system with its attendant negative impact on the economy. This has prompted the current administrators of the monetary policy to once again resort to the system of foreign currency float management. Under this approach the official and parallel market exchange rates are unified to form a single exchange rate.

From the foregoing it is clear that economic managers are still experimenting on the desired EXR to adopt (Zakari, 2020). The question now is for how long will Nigerians wait to have an efficient foreign exchange rate that can add values to their lives? Previously experts have attempted studies on this challenging phenomenon but it seems most of them have narrowed their research to few years back. This study has therefore been envisaged to cover this gap by expanding the data to capture reasonable past and present period so as to be able to predict effectively the likely solutions to this challenge which seems to have dragged our country behind other third world nations.

From the foregoing therefore the major objectives of the study is to empirically evaluate the impact of exchange rate fluctuations on economic growth in Nigeria. Other specific objectives are; to find out the impact of external reserve, inflation rate, interest rate (INR) on EG in Nigeria from 1990 to 2023. In this respect, the major hypothesis of the research is here by stated as follows:

$H_0$ : Significant relationship does not exist between EXR fluctuations and EG in Nigeria.

## 2. LITERATURE REVIEW

### 2.1. Conceptual Review

#### 2.1.1. Inflation

This refers to a condition of sustained increased in general price level (Aigbokhan, 2020). There is also a caused based definition associated with the Monetarist. For example, Milton Friedman considered inflation as a condition where there is general excess demand in which “too much money is chasing too few goods.”

However, the monetarist believe that inflation is always a monetary phenomenon and can only result from a rapid increase in the quantity of money than output. Inflation can be caused by increased demand for goods and service which is out matched by corresponding increase in supply. Inflation can also result from increase in cost of production which may be as a result of increased is cost of raw materials and wages paid to workers. Again inflation may be due to increase in the stock of money. Cause-based definitions do not necessarily make the understanding of inflation any easier especially where there are more than one cause. For example, for an open economy where imports constitute a sizeable proportion of inputs into manufacturing, a rising price level for imports will be transmitted to the importing country. But such inflation is more of symptom-based than cause based. Also, increase in imports may be due partly to increase in the money supply. Such inflation then has both symptom-based and cause-based elements. So, a useful operational definition would simply be the symptom-based type given above.

Since it is movements in price level which define inflation rate, it follows that in order to measure inflation it is necessary to measure the price level. But the price level can only be computed from a host of individual prices of commodities and therefore involves the use of an index of prices. Then arise the problem of deciding what type of index and which price should be used in deriving the index. Here we are not concerned with the problem of index number construction, but only to indicate what measures are generally used to measure inflation. There are three price indices that can be used. These are consumer or retail price index (CPI or RPI), wholesale price index (WPI) and implicit GDP deflator. In Nigeria, the ones commonly used are CPI and GDP deflator. In the first, the sample index is computed for a particular period by dividing the current actual average price level for the sample by its level in the base year. Then the aggregate consumer price index is computed as a weighted average of the simple price relatives. Because it is a base weighted index, the weights used are the expenditure on particular items in the base period divided by the total expenditure in the base period. Inflation is then measured as the percentage change in the index number over a specified period, usually 1 year.

In this study, we have therefore taken inflation rate as a proxy for inflation in our analysis. And figures for inflation rate are available in the statistical bulletin of Nigeria apex bank under the real sector of the economy.

#### 2.1.2. Interest rate

There are basically two main perspectives for looking at interest rate. There is the classical approach which sees interest rate as a price for savings which is determined by the intersection of demand for and supply of savings (or sometimes referred to as intersection of investment and savings) Aigbokhan (2020). There is also another way of seeing interest rate from the Keynesian perspective. To them interest rate is a reward for abstaining from consumption, they argued that if cash is hoarded, though not consumed, it does not earn interest. Therefore INR is the reward for parting with liquidity. They concluded that INR is the price which equates the desire to hold cash with the available quantity of cash.

In Nigeria, interest rate is determined by the monetary policy committee of the Apex Bank in their periodic meetings. They set the monetary policy rate (MPR) which becomes a bench mark for all deposit money banks to set their rates. In this study we used the interest rate as released by the CBN as a proxy for INR in Nigeria. These figures are available in their Statistical bulletin under the real sector for 2023 edition.

### 2.1.3. External reserve

There is no water tight formula for measuring the optimum reserve requirement of any country. Therefore a Central Bank should be able to project from time to time, the probable future changes in the external reserve levels consistent with her external obligations (Onoh, 2020) Empirical findings however, revealed that the monetization of reserves into domestic currency increases the monetary base of the banking system, the money supply target and inflation rate. Akpokerere et al. (2024) study on monetary policy importance and stock market returns volatility in Nigeria for the 1993-2022 recommended that CBN should put measures in place to increase cash reserve ratio as this will increase EG rate in the country. In Nigeria for instance, the monetary policy authority has hardly projected external reserve targets around which monetary policy can be built. This may be due to Nigeria dependence on oil revenue. Non-oil export another source of foreign receipt is insignificant compare to oil revenue hence there are no long-term reserve projections in the policy matrix of the authorities. The floating of the naira under the present regime means that the need to keep minimum reserves for future critical import is not urgent. Importers are now free to import as much goods and services as they want provided they can afford to purchase sufficient foreign exchange at market determined rates to pay. Currently the foreign exchange earned by government is directed towards meeting external debt obligations (Akpokerere et al., 2024).

In this study, we have used external reserve figures as released by the Nigeria apex bank as proxy for external reserve variable. Data on this is also available in their statistical bulletin for 2023.

### 2.1.4. Economic growth

Simply put, economic growth refers to increase in average rate of output produced per person, usually measured on per annum basis (Ghatak, 1999; Akpokerere and Okoroyibo, 2020) sees EG as the rate of change in National output or income in a specific period. The increase could be in form of capital stock, population or productivity of labour force including break-through in the technological progress (Aigbokhan, 2020). Therefore all growth models allow for these factors. We can differentiate between nominal and real growth. The former refers to growth in output with no allowance for price changes (inflation) whereas the latter allows for price changes between the years considered. Growth with allowance for price changes is referred to as real growth while the latter is nominal growth. The concern about growth derives from the observation that for a number of other macroeconomic policy goals to be attained, the economy needs to be growing. For more labour to be absorbed in industry, there would need to be increased demand for the output of that industry. Increased demand would come about if there is growth in income. Secondly, growth is often association with improvement in welfare. With labour force

held constant, an increase in output means that it is possible for an individual to become better off without someone else becoming worse off, in the “Pareto” welfare sense. When this happens, it can be said that growth makes a society better off, while no-growth or negative growth makes a society less better off or worse off.

However, although a positive growth can lead to an increase in welfare, this is not always the case. A lot still depends on the structure of growth and the way the increased output is distributed. Also, the concentration on the growth of output fails to take account of the impact on the environment. The increase in output may result in the felling of trees, exploitation of minerals, fishing of the rivers, pollution of various sorts (airs, rivers and seas, environment). Because the environment itself provides amenities and thereby contributes to welfare, an increase in welfare resulting from increased output may be wiped away or reduced by the decrease in welfare from environmental degradation. This is why we often hear of such expressions as the cost of EG or the limits of growth. This debate is obviously beyond the scope of this work. We have mentioned it to draw attention to the need to avoid confusing growth with welfare improvement, or growth with development.

Closely related to the issue of growth and welfare is the observation that with increased output or income, it is possible to increase government spending in absolute terms without altering the relative size of government spending. Such an increase in government spending can then re-distribute the benefits of the increased output through transfer payments or indirectly through engaging in major public works such as schools, hospitals and roads from which people can earn income and other benefits. However, it is also possible that such spending may not necessarily lead to an improvement in welfare if it is concentrated on defence build-up or non-productive activities. Again, this is a debate beyond the scope of this work, which nonetheless needs to be highlighted.

In this study however, we have used real gross domestic product as proxy for EG. Figures for this are available in Nigeria apex bank statistical bulletin for 2023.

## 2.2. Empirical Review

Emerah et al. (2020) investigated the relationship between EXR and output growth, export and import in Nigeria. They used the ordinary least Squares Multiple Regression approach. Their results shown that there exist a positive and significant association between gross domestic output, EXR and exports. The result further indicates that all the independent variables were significant in explaining the growth of the Nigeria economy within the period. Nsofor et al. (2021) carried out a study on the volatility of EXR and how it affects gross domestic product. The following were taken as independent variables; Government expenditure, external reserve, foreign investment. The study covered the period between 1987 and 2019. Employing GARCH Model in determining the volatility of EXR, it was found that foreign investment and exchange rate had significant and negative impact on growth of Nigerian economy. Adelowokan et al. (2020) investigated the effect of exchange rate volatility on investment and growth of the Nigerian economy. Using Vector Error Correction (VEC) method, they found that exchange rate fluctuations have a positive effect on inflation.

Vieira (2020) investigated the effect of real EXR fluctuations on long run economic growth for emerging and advanced economies between 1985 and 2018. He found that exchange rate volatility negatively affect output growth. Amoah (2019) investigated how exchange rate affects long-run EG in selected African economies. Using ARDL approach, he found out that no significant relationship exist between real exchange rate fluctuations and growth of the economy.

Ribeiro et al. (2021) investigated how exchange rate impacts on EG using 54 developing countries between 1987 and 2019. They used multiple regression approach and discovered that EG in less developed countries was negatively related to exchange rate fluctuations. Van and Baer (2019) using panel model and unbalanced panel data from 1985 to 2017 using 39 countries in Latin America as sample, the result shown a negative effect of exchange rate on output growth.

Raxmin (2020) investigated the effect of devaluation on output growth in 17 developing countries with in the period 1988-2019. Using panel data analysis and Generalized Method Moments, the result shown that devaluation of currency is negatively related to growth of the economy.

Bahani-Oskooee and Kandl (2021) investigated the transfer mechanism from exchange rate to EG in South East. Asian countries. They used monthly data between 1990 and 2019. Using Johansen Cointegration and Granger causality test, the result shown that the depreciation of local currencies had a negative impact on growth of the economy in these Asian countries.

Galindo and Montero (2022) studied the causality relationship from exchange rate to economic growth and using panel data relating of 9 Latin American Countries. The result shown that increases i.e. exchange rate in countries which have high foreign debt ratio negatively affected EG.

Thapa (2021) investigated how exchange rate fluctuations affect output growth in Nepal. He used annual data from 1989 to 2019. The ECM result shown that real exchange rate had a contractionary impact on output growth.

Domac (2021) studied how exchange rate fluctuations is related to growth of the economy between 1989 and 2019 in Turkey. Using multiple regression analysis, he discovered that devaluation of the currency positively impacted output growth.

Narayah and Narayah (2021) studied the impact of devaluation in Fiji economy between 1990 and 2020. Employing co-integration approach, he found out that devaluation result in widening effect. Specifically, It revealed that 10% devaluation led to increase in output by 3.3%.

Tarawelle (2022) investigated the way currency exchange affects output growth in Sierra Leone. Using Johansen co- integration technique between the period 1990 and 2021. The result revealed that real exchange rate affects output growth positively. Aman et al. (2019) studied the relationship between currency EXR and growth

in output in Pakistan. Using the period between 1987 and 2017 and employing 3 stage least square technique. They revealed that exchange rate fluctuations positively impacted output growth through the promotion of import substitution policy. Chem (2022) investigated how exchange rate affects output growth in Chinese provinces. Using data between 1989 and 2020 in respect of 28 provinces and employing dynamic panel data estimation, he discovered that real EXR increase, positively impacted the economies of the provinces. Obansa et al. (2020) studied the impact of exchange rate dynamics on the economy of Nigeria from 1984 to 2018. The result shown that exchange rate fluctuations positively affected output growth.

### 2.3. Theoretical Framework

The study is anchored on the optimal currency area (OCA) theory propounded by Mundell (1961) and Mckinnon (1963). The theory main concern is that business cycle and trade among nations should be stable. This pre supposes the following paradigm:

- Labour mobility
- Trade openness
- Symmetry of shocks

The theory recognises that exchange rate should be reasonably fixed, so that trade and output growth can be accelerated. Therefore our model is based on the work of Adenirian et al. (2014) which draw a lot from this theory and used Real Gross Domestic Product as proxy for EG which represents our dependent variable. For the independent variables the Naira/Dollar exchange rate, inflation rate, interest rate, external reserves were adopted.

## 3. METHODOLOGY

### 3.1. Data Sources

This research used secondary data which is available in the CBN Statistical Bulletin, 2023.

The study utilized the expost-facto research design method since the time series data are already available in the apex bank statistical bulletin.

### 3.2. Estimation Method

The research starts with the evaluation of the descriptive statistics and correlation matrix. Thereafter, the unit root test was conducted on each of the variable to ascertain the stationarity of the variable. This was closely followed by the Johansen cointegration test to determine the existence of cointegrating equation in order to establish a long-run relationship among the variables. To be able to ascertain the significance of each of the independent variable on changes of the dependent variable, the Parsimonious Error correct model result has to be estimated. This also shows the estimates of their various coefficients. Also the pairwise Granger causality test was conducted. Lastly, the diagnostic check which comprise LM test, the Jarque-Bera normality test and heteroscedasticity test were included in this analysis.

### 3.3. Model Specification

The mathematical form of the model is hereby specified below:

$$RGDP = f(EXR, ERS, INF, INT) \quad (1)$$

Where:

RGDP = Real Gross Domestic Product

EXR = Exchange Rate

ERS = External Reserve

INF = Inflation Rate

INT = Interest Rate

Modelling econometrically therefore

$$RGDP = \alpha_0 + \alpha_1 EXR + \alpha_2 ERS + \alpha_3 INF + \alpha_4 INT + Ut \quad (2)$$

Ut =Error Term

$$\alpha_1 > 0$$

$$\alpha_2 > 0$$

$$\alpha_3 < 0$$

$$\alpha_4 < 0.$$

## 4. RESULTS

### 4.1. Descriptive Statistics

The mean of RGDP is 45,812 and is higher than the median of 43,385 meaning that RGDP increased with in the period of the study (Table 1). The highest value is 74,752 and the minimum is 21,412. This shows that RGDP is skewed to the right. The standard deviation of 20,370 shows that the deviation from the mean was not significant. Interest rate has a mean value of 23.30 and a median of 23.00 indicating a marginal rise within the study period. The maximum and minimum values were 27.00 and 20.00 respectively. The standard deviation of 1.81 show a moderate deviation from the mean. The mean for External reserve is 22,751 while the median is 26,990 shows an increase in external reserve within the period. The highest and lowest values were 53,000 and 1,429 respectively. The standard deviation of 17,239 also shows moderate deviation from the mean. The mean for Exchange rate was 67.53 while the median was reported as 22.05. This shows that Exchange rate declined within the study period. The maximum value was 150.30 while the minimum value was 8.04. This shows a violent deviation of 51.91 from the mean within the period of the study. The Skewness which measures the degree of asymmetry indicates that series is Skewed to the right i.e. positively Skewed except for interest rate. The values of the Jarque-Bera shows that the series is not normally distributed. For the Kurtosis, which measures the peakedness or flatness of the series at 3, the result indicates that no variable satisfied this condition.

**Table 1: Descriptive statistics**

Results	RGDP	INT	INF	ERS	EXR
Mean	45812.58	23.30303	18.39394	22751.76	67.53667
Median	43385.00	23.00000	16.00000	26990.00	22.05000
Maximum	74752.00	27.00000	119.0000	53000.00	150.3000
Minimum	21462.00	20.00000	11.00000	1429.000	8.040000
Standard Deviation	20370.40	1.811161	18.26701	17239.39	51.91946
Skewness	0.098861	-0.172771	5.285021	0.151543	0.173384
Kurtosis	1.372885	2.387236	29.65692	1.463676	1.205317
Jarque-Bera	3.694072	0.680459	1130.686	3.371709	4.594063
Probability	0.157704	0.711607	0.000000	0.185286	0.100557
Sum	1511815.	769.0000	607.0000	750808.0	2228.710
Sum Sq. Dev.	1.33E+10	104.9697	10677.88	9.51E+09	86260.17
Observations	33	33	33	33	33

### 4.2. Correlation Matrix

A look at the correlation matrix indicates that the absolute values of all the correlation coefficient between the variables are 0.80 and below which is the benchmark to establish that the series is free from the problem of multicollinearity (Table 2).

The result of the Augmented Dickey Fuller (ADF) test presented above shows that the variables are stationary after the first difference (Table 3). This is because the absolute value of the ADF test statistics is higher than 5% critical values of the respective variable.

This enables us to proceed to test for their long-run cointegration. The Johansen cointegration test was employed to do this. The result of the relevant section of cointegration test is presented in Table 4.

The result of the test using trace and Max-Eng-shows the existence of one cointegration, equation at 5% level of significance. This leads us to estimation of the Error Correction Model. The result of the Johansen Error Correction Mechanism is presented in Table 5.

The result shows that 57% of the total variation in GDP is explained by the independent variables – Interest rate, Inflation rate, External reserve, and EXR. The remaining 43% is explained by factors outside the model. The result revealed that one period lag interest rate has a negative impact on GDP. This means that a fall in interest rate by one unit increased the GDP by 0.49 units or a rise in interest rate by one unit reduced GDP by 0.49 units. Again inflation lagged by one periods has a positive impact on GDP, meaning that an increase by one unit in inflation will cause GDP to rise by 5.12 units. External reserve has a positive relationship with GDP. This means that a unit rise in external reserve will result in increase in GDP by 3041.57 units. Lastly, with a negative relationship between EXR and GDP, a unit increase in exchange rate will cause the GDP to depreciate by 7.19 units. In general, with a t-statistic of -1.96521, 2.14240, 2.39510, -0.50933 and probabilities of 0.032787, 0.026376, 0.045976, 0.027710, we therefore hold that the one period lagged independent variables are statistically significant in explaining the changes in gross domestic.

The ECM of (-1) has a correct negative sign. This means that about 25% of the errors in each period are corrected in subsequent period.

The Jarque-bera test with a probability of 0.44 indicate that the residuals are normally distributed (Table 6). The Breusch-Godfrey

serial correlation LM test with a probability of 0.23 means that the null hypothesis that the residuals are not serial correlated is validated. The heteroskedasticity with a probability of 0.54 indicates that the residuals are heteroskedastic (have constant variance).

The Granger causality test result shows that changes in EG is caused by exchange rate variations but variations in exchange rate could not be proven as cause for changes in EG (Table 7).

**Table 2: Correlation matrix**

Variables	RGDP	INT	INF	ERS	EXR
RGDP	1	0.05787875344961778	0.3233120398468009	0.8648885266042921	0.6255653298900544
INT	0.05787875344961778	1	0.008558206935742904	0.1912868368253276	-0.1072401370830864
INF	0.3233120398468009	0.008558206935742904	1	0.2599597421657699	0.27694719239642
ERS	0.8648885266042921	0.1912868368253276	0.2599597421657699	1	0.34655930820204
EXR	0.6255653298900544	-0.1072401370830864	0.27694719239642	0.34655930820204	1

Source: E views 10 output

**Table 3: The result of the augmented dickey fuller (ADF) unit root test**

Variables	ADF test statistic	5% critical value	Order integration
RGDP	-5.949850	-2.967767	1 (1)
ERS	-4.935923	-2.963972	1 (1)
EXR	-5.440144	-2.960411	1 (1)
INF	-5.164097	-2.957110	1 (1)
INT	-4.294758	-2.957110	1 (1)

Source: Author's computation using e views 10

**Table 4: Cointegration test result**

Sample: 1990 2022

Included observations: 31

Series: RGDP ERS EXR INT INF

Lags interval: 1 to 1

Selected (0.05 level\*) Number of Cointegrating Relations by Model

Data Trend:	None	None	Linear	Linear	Quadratic
Test Type	No Intercept	Intercept	Intercept	Intercept	Intercept
	No Trend	No Trend	No Trend	Trend	Trend
Trace	1	0	0	1	1
Max-Eig	0	0	0	1	1

\*Critical values based on MacKinnon-Haug-Michelis (1999)

Source: Author's computation using e views 10

**Table 5: Parsimonious error correction result**

Variable	Coefficient	Standard error	t-statistics	Prob.
C	5.926058	0.36783	0.707198	0.015198
INT(-1)	-0.485483	0.24567	-1.96521	0.032787
INF (-1)	5.121019	0.27569	2.14240	0.026376
ERS (-1)	3041.571	0.18620	2.39512	0.045976
EXR	-7.191583	0.230712	-0.50933	0.2771
ECM (-1)	-0.25620	0.08941	1.25803	0.003402
R-squared	0.716846	Determinant resid covariance (dof adj.)		2.83E+13
Adj. R-squared	0.587817	Determinant resid covariance		4.55E+12
Sum sq. resids	43.80396	Log likelihood		-607.4676
S.E. equation	1.518378	Akaike information criterion		2.69784
F.statistic	4.810125	Schwarz criterion		2.93975
Log likelihood	-48.24606	Durbin-Watson		1.866545

Source: Author's computation using e views 10

**Table 6: Diagnostic test result**

Normality result	F-Statistic	Probability
Jarque-bera	1.65	0.44
Breusch-Godfrey serial correlation LM Test	1.06	0.23
White Heteroskedasticity	0.68	0.54

Source: Author's computation using e views 10

**Table 7: Granger causality test result**

Variables	F.Statistic	Probabilities	Decision
EXR does not Granger cause Economic Growth	0.13787	0.8718	Rejected
Economic Growth does not Granger cause EXR	1.7022	0.4294	Not Rejected

Source: Author's computation using e views 10

The result of our study which shows that EXR fluctuations negatively impacted output growth is not in consonance with that of Emerah et al. (2020) as well as that of Uduakobong & Enobong (2015) who discovered that exchange rate volatility positively affected EG in Nigeria. However, our study was confirmed by the study carried out by Nsofor et al. (2021) who found out that volatility i.e exchange rate had negative and significant impact on economic growth in Nigeria. Also our result was corroborated by a study carried out by Ribeiro et al. (2021). They studied the impact of exchange rate fluctuations on EG and found out that exchange rate negatively impacted EG in developing countries. The findings of Nyeche (2022) confirmed our result on external reserve which had positive and significant impact on EG within the study period. The result of the investigation conducted by Nwankwo (2022) is also at variance with our findings which stated that INR was significant and negatively impact on EG. Again, the study by Egbujo (2020) confirms our result which revealed that interest rate negatively impacted EG in Nigeria. The findings of Egbujo (2020) is also in consonance with our result which reveal that inflation was significant and positively impacted output growth in Nigeria during the period of this study.

## 5. CONCLUSION

This study investigated the impact of exchange rate fluctuations on EG in Nigeria from 1990 to 2023. It is anchored on the optimal currency area (OCA) theory propounded by Mundell (1961) and McKinnon (1963). The theory supports a fixed and stable EXR system which can propel increased growth in output when all uncertainties are reduced and investment increased by reducing exchange rate gains. The result of this study revealed that EXR and INR have negative effect on output growth while external reserve and inflation impacted economic growth positively in Nigeria within the time period considered by the study. Based on the outcome of the study, it can be seen that policy makers only try to manipulate exchange rate but failed to implement long term policies that can permanently stem the tide of volatility in exchange rate regime. This volatility has occasioned adverse effect of INR on the output growth of the economy.

From the study above, it is hereby recommended that the policy makers should expand the economic base of the country to create more room for export of agricultural products. Attempt should be made not just to export raw materials but to process them into semi-finished and finished goods before exporting them to earn more foreign exchange. The CBN is also advised to continue the current policy of defending the naira in the short-run. This will reduce the inflation rate which is currently one of the highest in the world.

## 6. CONTRIBUTION TO KNOWLEDGE

1. The study confirms earlier studies that exchange fluctuations impact EG significantly.

2. The study developed a model for investigating exchange rate volatility on economic growth based on optimal currency area (OCA) theory.
3. The study used up to date data that gave room for pragmatic solutions to the problem of exchange rate fluctuations and its impact on output growth in Nigeria.

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