

## **Exchange Rate Fluctuations and the Performance of the Nigerian Economy (1990-2016): Investigating the Nexus**

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### **Abstract**

The study examined the relationship between exchange rate fluctuations and the performance of the Nigerian economy; for the period (1990-2016). Secondary data were used and sourced from the Central Bank of Nigeria Statistical Bulletin. Ordinary Least Square (OLS) estimation technique was used to analyse the data. The result revealed that exchange rate has insignificant positive relationship with the performance of the Nigerian economy. The result also indicated that interest rate and inflation rate have negative insignificant relationship with the performance of the Nigerian economy. The coefficient of determination indicates about 65% of the variations in performance of the economy in Nigeria can be explained by changes in exchange rate variables. Thus, the study recommended that government should encourage the export promotion strategies in order to maintain a surplus balance of trade and also provide conducive environment, adequate security, effective fiscal and monetary policy, as well as infrastructural facilities so that foreign investors will be attracted to invest in Nigeria.

**Keywords:** *Exchange rate, Interest rate, Inflation rate, Nigerian economy.*

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### **Background to the Study**

The importance of financial institutions and growth relationship had occupied central position in the financial economics literature in recent decades for both developed and developing economies (Andabai, 2016). Exchange rate fluctuation and the performance of the economy nexus had been identified as one of the areas in the financial economics literature that can quicken the pace of growth and development in an economy such as Nigeria. Exchange rate is the price of a country's currency expressed in terms of some other currency; it determines the relative process of domestic and foreign goods, as well as the strength of external sector participation in the international trade (Adebiyi & Danda, 2009).

There is no country that lives in absolute self-sufficiency in this globalized world, indeed economies of all the countries of the world are linked directly or indirectly. This linkage is made possible through trade in foreign exchange (Rogoffs & Reinhart, 2004). Basically, the growth of an economy depends on the stability of foreign exchange of the country. Growth is a positive increment in doings and can only be achieved if the value of the currency used in transactions does not depreciate (Aliyu, 2011). Nigeria is a country in dire need of high and sustained economic growth that is capable of bringing rapid economic development and reducing poverty. Note that it is the goal of every economy to have a stable rate of exchange with its trading partners.

The consequences of substantial mis-alignments of exchange rates can lead to output contraction and extensive economic hardship like we are witnessing presently under the President Buhari led administration. Moreover; there is reasonably strong evidence that the alignment of exchange rates has critical influence on the growth rate of per-capita output of low income countries. Nigeria like many other developing countries of the world has adopted two main exchange rate regimes for the purpose of gaining internal and external balance. The argument and conditions for and against each regime is clear given that they were all aimed at maintaining stability in exchange rates (Ogun, 2006).

The study carried out by Eme and Johnson (2012) reveal that the fundamental objectives of exchange rate policy in Nigeria are to preserve the value of domestic currency, maintain a favorable external reserve position and ensure external balance without compromising the need for internal balance and the overall goal of macro-economic stability. This inconsistency in policies and lack of continuity in exchange rate policies aggregated unstable nature of the naira rate (Gbosi, 2005). The work by Aliyu (2011) and Benson and Victor (2012) noted that despite various efforts by the government to maintain a stable exchange rate, the Naira has depreciated throughout the 80's to date; it is against this background, this study intends to investigate the relationship between exchange rate fluctuations and the performance of the Nigerian economy.

### **Theoretical Literature**

The exchange rate is the price of one currency expressed in terms of another currency and is a vital macro economic indicator used for determining the overall performance of economy (Nzotta, 2014). This is usually expressed as the units of foreign currency needed to purchase one unit of domestic currency vice-versa. A devaluation or depreciation of exchange rate makes export cheaper and imports costlier which increase cost of imported raw materials and imported goods.

The situation increases the general prices level especially for an import dependent economy like Nigeria. Rising oil prices is expected to increase foreign exchange earnings of oil producing countries like Nigeria. This also leads to increase of foreign reserves, an increase in the supply of foreign exchange, moderation of demand pressure in the foreign exchange market and likely appreciation of the domestic currency.

Hence, a decline in oil prices results in a fall in foreign exchange earnings leading to a fall in the supply of foreign exchange. The resultant excess demand in the foreign exchange market would put pressure on the exchange rate leading to the depreciation of the domestic currency. The interaction of the demand and supply of goods and services across international borders has implication for the exchange rate. Therefore, for a country to appreciate her currency there is need to stimulate local production with the aim of exporting as well as reduce the volume of imports.

Rising domestic interest rates could attract capital inflow from foreign investor, leading to appreciation of the domestic currency. Also, as interest rates decrease, foreign investors in the domestic money market would withdraw their investment and put demand pressure on the foreign exchange leading to depreciation of the domestic currency.

### **Empirical Literature**

Aliyu (2011) asserted that appreciation of exchange rate results will in increased imports and reduced exports while depreciation would expand exports and discourage imports. He said that depreciation of exchange rate tends to cause a shift from foreign goods to domestic goods. Hence, it leads to diversion of income from importing countries to countries exporting through a shift in terms of trade, and this tends to have impact on the exporting and importing countries economic growth.

Hossain (2002) agreed that exchange rate helps to connect the price systems of two different countries by making it possible for international trade and also effects on the volume of import and exports, as well as country's balance of payments position. Rogoffs and Reinhart (2004) also agreed that developing countries are relatively better off in the choice of flexible exchange rates. Previous research on the impact of exchange rate on economic growth has reached contrasting results for instance; empirical evidence showed that real exchange rate variations can affect growth outcomes.

Edwards and Levy (2003) found evidence that countries with more flexible exchange rate grows faster. Faster economic growth is significantly associated with real exchange rate depreciation. Asher (2012) examined the impact of exchange rate fluctuations on the Nigeria economic growth from (1980-2010). The result showed that real exchange rate has a positive effect on the economic growth. Akpan (2008) investigated foreign exchange market and economic growth in an emerging Petroleum based economy in Nigeria from 1970-2003. The study found out that there is a positive relationship between exchange rate and economic growth.

Ajayi (2012) examined the effect of exchange rate volatility on macro-economic performance in Nigeria from 1986-2010. They discovered that exchange rate is positively related to Gross Domestic Product (GDP). Adebisi and Dauda (2009) argued on the contrary that trade liberalization promoted growth in the Nigeria industrial sector and stabilized the exchange

rate market between 1970-2006. The study revealed that there was a positive significant relationship between index of industrial production by 12:2 percent and economic growth. By implication, it means the policy of deregulation impacted positively on export through exchange rate depreciation. Hence, other studies also showed that exchange rate has no significant effect on economic growth performance for example, Collins, Yuchin and Bosworth (2016) provided evidence with a large sample of industrial and developing countries, real exchange rate volatility hampers economic growth and reduces productivity growth.

Ogun (2006) examined the impacts of real exchange rate on the growth of non-oil export in Nigeria highlighted the effect of real exchange rate misalignment and volatility on the growth of non-oil exports. He observed that irrespective of the alternative measures of misalignment employed, both real exchange misalignment and volatility adversely affected growth of non-oil exports. Eme and Johnson (2012) investigated the effect of exchange rate movements on real output growth in Nigeria for the period of 1986-2010. The result revealed that there is no evidence of a strong direct relationship between changes in exchange rate and output growth. Rather, Nigeria economic growth has been directly affected by monetary variables.

**Methodology**

The study applied *ex-post-facto* research design to source requisite information. An *ex-post-facto* research design is a systematic empirical inquiry that requires the use of variables which the researcher does not have the capacity to change its state or direction in the course of the study (Onwumere, 2009). Data for this study were sourced from the Central Bank of Nigeria Statistical Bulletin, 2016, Online Edition available in: [www.cenbank.org](http://www.cenbank.org). Data collected and used for the variables form the basis of this study which covered the period of 27 years (1990-2016). Gross Domestic Product Rate was used as the dependent variable to measure the performance of the Nigerian economy; whereas, Exchange Rate (EXR); Interest Rate (INT) and Inflation Rate (INFR) were used as the explanatory variables to measure exchange rate fluctuations as shown in appendix 1.

**Model Specification**

Multivariate linear regression model is used for the analysis and a model is adopted from the work of Benson & Victor (2012). The functional model is stated as:

$$GDP = f(INTR, LR, EXCR)$$

Where:

- GDP = Gross Domestic Product as proxy for economic growth.
- INTR = Interest Rate
- LR = Liquidity Ratio
- EXCR = Exchange Rate

The above variables were adjusted to suit with the current study. The modified functional model is stated as:

$$GDP = f(EXR, INR, INFR).....(1)$$

The equation form of the model can be written as:

$$\ln GDP_r = \beta_0 + \beta_1 \ln EXR + \beta_2 \ln INT + \beta_3 \ln INFR.....(2)$$

- GDP<sub>r</sub> = Gross Domestic Product growth rate as proxy for economic performance
- EXR = Exchange Rate

INT = Interest Rate  
 INFL = Inflation Rate  
 $\beta$  = intercept,  $\beta_1 - \beta_3$  = Coefficient of the independent variables

Note: All variables are in their natural logarithm form.

## Data Analysis

### Table 1, Dependent Variable: GDP<sub>r</sub>

Method: Least Squares

Date: 07/17/17 Time: 04:34

Sample: 1990-2016

Included observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.639624	2.554314	1.816387	0.0818
EXR	0.014260	0.009884	1.442751	0.1620
INFL	-0.021877	0.032266	-0.678010	0.5043
INTR	-0.008393	0.123945	-0.067719	0.9466
R-squared	0.647033	Mean dependent var	5.239414	
Adjusted R-squared	0.641662	S.D. dependent var	2.658989	
S.E. of regression	2.589394	Akaike info criterion	4.872288	
Sum squared resid	160.9190	Schwarz criterion	5.062603	
Log likelihood	-64.21203	Hannan-Quinn criter.	4.930469	
F-statistic	1.490287	Durbin-Watson stat	1.194766	
Prob(F-statistic)	0.242409			

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## Discussion of Findings

The result from (table 1) suggests that exchange rate has a positive insignificant relationship with GDP growth rate of Nigeria. The result further depict that exchange rate contributes 0.014260 to GDP growth rate in Nigeria. This implies that for every unit change in exchange rate; there is a corresponding positive change of 0.014260 on GDP growth rate in Nigeria. The p-value of 0.1620 shows an insignificant relationship between exchange rate and GDP growth rate in Nigeria. While inflation rate depict a negative relationship with GDP growth rate in Nigeria. It is also, statistically observed that inflation rate contributes -0.021877 to GDP growth rate in Nigeria; meaning that for every percentage change in inflation rate there is a corresponding negative change of 0.021877 in GDP growth rate in Nigeria, The p-value of 0.5043 indicates an insignificant relationship between inflation rate and GDP growth rate in Nigeria.

The result further reveals a negative significant relationship between interest rate and GDP growth rate in Nigeria. The study also, quantitatively observed that interest rate contributes -0.008393 to GDP growth rate in Nigeria, meaning that for every percentage change in interest rate there is a corresponding negative change of 0.008393 in GDP growth rate in Nigeria. The p-value of 0.9466 indicates that there is an insignificant relationship between interest rate and

GDP growth rate in Nigeria. Furthermore, the regression results show a co-efficient of determination ( $r^2$ ) of 0.647033 signifying that explanatory variables (Exchange Rate, Inflation Rate and Interest Rate) can explain 65% of the predator (GDP growth rate) in Nigeria. While the remaining 35% of GDP growth rate in Nigeria could be accounted or explain by other variables or factors not included in the model. Hence, the p-value of 0.242409 is insignificant at 5% significant level and 95% confidence level. The study concludes that exchange rate insignificantly contributes to GDP growth rate in Nigeria. Finally, Durbin-Watson statistics of 1.194766 shows the absence of positive auto correlation among the variables in the model.

### **Conclusion and Recommendations**

Exchange rate is the price of a country's currency in relation to another country. This is the amount of units of a currency that can buy another amount of units of another currency. In Nigeria, exchange rate has changed within the time frame from regulated to deregulated regimes (Ewa, 2011). The study examines the relationship between exchange rate and the performance of the economy. Hence, the study reveals that exchange rate has a positive insignificant relationship with the performance of the Nigerian economy. The study recommends that the government should encourage the export promotion strategies in order to maintain a surplus balance of trade and also conducive environment, adequate security, effective fiscal and monetary, as well as infrastructural facilities should be provided so that foreign investors will be attracted to invest in Nigeria.

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#### Appendix 1: Exchange Rate and Gross Domestic Product growth rate Nigeria (1990-2016)

Year	GDP Growth Rate	Exchange Rate	Interest Rate	Inflation Rate
1990	8.3	8.04	25.30	7.8
1991	4.6	9.91	20.04	12.195
1992	3.0	17.30	24.76	44.565
1993	2.7	22.05	31.65	57.14
1994	1.3	21.89	20.48	57.42
1995	2.2	81.20	20.23	72.73
1996	3.4	81.20	19.84	29.29
1997	3.2	82.00	17.80	10.67
1998	2.4	84.00	18.18	7.86
1999	2.8	93.95	20.29	6.62
2000	3.9	102.10	21.27	6.94
2001	4.6	111.93	23.44	18.87
2002	3.5	121.00	24.77	12.88
2003	10.335	129.30	20.71	14.03
2004	10.5	133.50	19.18	15.00
2005	5.393	131.66	17.95	17.86
2006	6.211	128.65	16.90	8.22
2007	6.972	134.05	16.94	5.42
2008	5.9846	132.37	15.48	11.58
2009	6.96	132.60	18.36	12.54
2010	7.161	148.68	17.59	13.72
2011	7.356	146.20	16.02	10.80
2012	6.322	150.20	12.00	12.20
2013	7.161	156.00	12.00	10.67
2014	7.012	264.56	12.03	12.43
2015	7.015	470.65	14.46	17.36
2016	7.460	462.43	14.45	17.46

**Sources:** Central Bank of Nigeria Statistical Bulletin 2016.