



EXCHANGE RATE AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT: This paper examined the effect of exchange rate on the economic growth of Nigeria. It specifically looked at effect of exchange rate on gross domestic product (GDP), gross national product (GNP) and unemployment. Secondary data from the Central Bank of Nigeria Statistical Bulletin were collected for a period of ten years, 2009 to 2018. Ex-post facto research design was utilized. While some diagnostic tests were carried out to confirm the integrity of the data and their relatedness in both short and long term basis, Ordinary Least Square technique was employed in the analysis of hypotheses. It was found that while exchange rate had significant effect on GDP and GNP, it was non-significant on unemployment. This implies that micro economic indices of GDP and GNP could be used to consciously adjust standard of living of the citizens. The study concludes that exchange rate should be handled with utmost concern by experts in the field to avoid unnecessary fluctuations that may inflict unbearable economic consequences on the Nigerian people. The study recommends, among others, the adoption of policies that will affect GDP in such a way that the welfare of the people can be upgraded.

1.0 Introduction

Exchange rate strategically lies at the centre of global financial system and sets the terms on which countries trade each other's goods and services. Exchange rate is one of the most important key microeconomic variables in the context of general economic policy making and reform programmes. It is an essential element in the determination of the pace at which a country's economic activities will grow. Thus, discussion on methods of management of exchange rate has been a recurring topic in international monetary economics. According to

Chou (2000), the debate on exchange rate management transcended the collapse of the gold standard in the 1930s to the emergence of Bretton Wood System of adjustable peg from the 1940s through other various exchange rates. The debate moves along the two notable poles of fixation and flexibility. With the move from fixed to flexible exchange in Europe in 1973, there was increasing concern about effects of exchange rate variability on trade. Flexible exchange rate which followed the collapse of the Breton Wood System is of concern to economists and policy makers (Williamson, 2001).

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The Nigerian economy has been visibly distressed in the different phases of exchange rate management (ERM); each coming with its own, possible problem. According to Idika (1998), frequent changes in foreign exchange policies caused by unstable political environment have prevented these policies from coming full circle. Exchange rate stability, which is essential for growth is influenced greatly by the appropriate policy mix by government in their quest to attain macroeconomic targets.

Fluctuations in exchange rate have powerful effects on imports and exports of the countries in question through relative prices of goods. Mordi (2006) posited that the Nigerian economy is highly dependent on imports for both consumption and production. According to World Bank (2003), many oil producing nations are exposed to variations in exchange rate due their large oil wealth. This variation which acts as tax on investment in trade goods production has adverse impact on growth especially on agricultural and manufacturing sectors. Ewa (2011) agreed that the exchange rate of the naira was relatively stable between 1970 and 1979 during the oil boom era and when agricultural produce accounted for more than 70% of the nation's Gross Domestic Products (GDP). In 1986 when Federal government adopted Structural Adjustment Programme (SAP), the country moved from a pegged to a flexible regime where exchange rate was left completely to be determined by market forces but with monetary authorities intervening periodically in the foreign exchange market in order to attain some strategic objectives (Mordi, 2006). This inconsistency and lack of continuity in exchange rate policies aggravated the unstable nature of the naira rate (Gbosi, 2005). Benson and Victor (2012) and Aliyu (2011) noted that despite various efforts by the government to maintain a stable exchange rate, the naira has depreciated throughout the 80's to date.

Gross National Product (GNP) was similarly affected. The combined effects of exchange rate variability on GDP and GNP, among others, resulted

in the abysmal low level of per capita income of Nigerians. The economic implication of this may not be clear to the ordinary citizens. What they invariably understand is that the Naira has lost reasonable proportion of its purchasing power. This is often reflected in the quantity of goods and services purchased by Naira.

Another area where deplorable state of the GDP and GNP in Nigeria usually become evident is in unemployment rate. Consequent upon the intrinsic relationship between these variables, unemployment rate in the country has continued to rise unabated with decline in the GDP and GNP. There is no gainsaying that the economic, psychological and physical consequences of unemployment in a country like Nigeria where provision of social welfare for the unemployed is seen as hallucination, can better be imagined than described.

1.1 Statement of the problem

Since the generalized fixed exchange rate regime and adoption of floating system by the industrialized countries in 1973, most countries including Nigeria, have experimented with various types of exchange rate arrangement ranging from the peg system to weighted currency basket, managed floating and more recently, to the monetary zone arrangement (Mordi, 2006). Inconsistent management of the various exchange rate regimes adopted so far by the country to help check volatility appears to have jeopardized the overall macroeconomic policy objectives.

According to Mordi (2006), once an exchange rate is not fixed it will be subject to variation, thereby making floating exchange rates more volatile. The degree of volatility and the extent of stability maintained are affected by economic fundamentals. Thus, strong economic fundamentals are meant to produce favourable economic environment.

The naira exchange rate has been fluctuating since the introduction of the Structural Adjustment Programme (SAP) in 1986. The Nigerian situation since SAP has mostly been characterized by



increasing demand which outstripped supply, contributing generally to the continuous depreciation of the naira. The SAP was designed to deal with the underlying imbalances in the Nigerian economy following the collapse of international oil market. This phenomenon of excess demand for foreign exchange in relation to supply has contributed to the dwindling fortunes of the naira in all the foreign exchange markets. Also, weak production base and undiversified nature of the economy are among the factors that led to the depreciation of Naira. The country's over dependency on oil as the main source of revenue resulted in negligence of non-oil exports for foreign exchange earnings in the early 1970s. The enormous foreign exchange earnings from crude oil exports encouraged the massive importation of finished goods and services. The implication of over dependency on export of oil is that the economy is highly prone to external shocks to the extent that any crash in the oil price will lead to decline in foreign exchange earnings, and destabilizing effects on macroeconomic variables such as exchange rate, gross domestic product, interest rate, and inflation rate. According to Obadan (1998), adverse foreign exchange rate regimes adopted so far have affected the Nigerian economy over the years. The combined effect of dwindling price of oil and the volatility in exchange rate due to inconsistency in rate regimes has led to constant depreciation of naira. It is against this background that this study is structured.

1.2 Objectives of the Study

The general objective of the study is to determine the effect of exchange rate on the economic growth in Nigeria. To achieve this, the study considered the following specific objectives:

- 1 To examine the impact of exchange rate on Gross Domestic Product (GDP) in Nigeria.
- 2 To evaluate the effect of exchange rate on Gross National Product (GNP) in Nigeria.
- 3 To determine the impact of exchange rate on unemployment in Nigeria.

1.3 Research questions

The following research questions guided the study:

i What is the impact of exchange rate on Gross Domestic Product (GDP) in Nigeria?

ii What is the effect of exchange rate on the Gross National Product in Nigeria?

iii What is the impact of exchange rate on unemployment in Nigeria?

1.4 Statement of hypotheses: The following hypotheses were tested;

HO₁: Exchange rate has no significant impact on the Gross Domestic Product (GDP) in Nigeria.

HO₂: Exchange rate does not have significant effect on the Gross National Product (GNP) in Nigeria.

HO₃: Exchange rate has no significant effect on unemployment in Nigeria.

2.0 Review Of Related Literature

2.1 Concept of exchange rate

Exchange rate is the price of one country's currency expressed in terms of other currencies. It determines the relative price of the domestic goods, as well as the strength of external sector participation in the internal trade. Exchange rate regime and interest rate remain important issues of discourse in the international finance as well as in developing nations, and more in economics embracing trade liberalization as requisite for economic growth (Obansa, Okoroafor, Aluko & Eze, 2003).

In our own view, exchange rate refers to the absolute value of a country's currency in comparison with other currencies on equal footing. It is the weight of a country's currency in an international scale. It is usually the basis of international payment between countries. Certain factors affect it. Bergen (2017) argues that it is affected by differential in inflation, differential in interest rate, current account deficits, public debts, balance of trade, political stability and economic performance.

2.2 Theoretical review

2.2.1 Optimal Currency Area (OCA)

The earliest and leading theoretical foundation for the choice of exchange rate regimes rests on the optimal currency area theory, developed by Mundell (1961) and McKinnon (1963). This literature focuses on trade, and stabilization of the business cycle. It is



based on concepts of the symmetry of shocks, the degree of openness, and labour market mobility. According to the theory, a fixed exchange rate regime can increase trade and output growth by reducing exchange rate uncertainty and thus the cost of hedging, and also encourage investment by lowering currency premium from interest rates. However, on the other hand it can also reduce trade and output growth by stopping, delaying or slowing the necessary relative price adjustment process.

Later theories focused on financial market stabilization of speculative financial behaviour as it relates particularly to emerging economies. According to the theory, a fixed regime can increase trade and output growth by providing a nominal anchor and the often needed credibility for monetary policy by avoiding competitive depreciation, and enhancing the development of financial markets (Barro & Gordon, (1983); Calvo & Veg, (2004); Edwards & Savastano, (2000); Eichengreen, (1999) and Frankel, (2003).

2.3 Empirical Review

Mahonnye & Tenda (2019) examined the exchange rate impact on output and inflation. This research looked at the inflationary effect of currency devaluation and its contractionary effect on real output growth in Zimbabwe. The study used quarterly data from 1990 – 2006 and used the Johansen co-integration regression test and Vector Error Correction Model (VECM). The study found that in both the short run and long run, fluctuations in the real exchange rates are significant on real output growth and expansion.

Akinbonola (2012) studied the dynamics of money supply, exchange rate and inflation in Nigeria. The paper utilized secondary data obtained from the International Financial Statistics (IFS). The sample covered quarterly data from 1986 – 2008 while Vector Error Correction Model (VECM) was applied. The empirical result confirmed that in the long run, money supply and exchange rate have significant inverse effect on inflationary pressure.

Martins and Muftau (2014) investigated the impact of exchange rate depreciation on balance of payment (BOP) in Nigeria over the period of 1961 – 2012. The analysis was based on a Multivariate Vector Error Correction framework. A long-term equilibrium relationship was found between exchange rate and other variables employed.

Akpan and Atan (2011) investigated the effect of exchange rate movement on economic growth in Nigeria. A Generalised Method of Moments (GMM) technique was employed. The estimation results suggest that there is no evidence of a strong direct relationship between changes in exchange rate and output growth. Rather, Nigeria's economic growth has been directly affected by monetary variables.

Nwafor (2018) studied the effect of Naira rate on economic growth in Nigeria between 2006 and 2016. This study however, employed Ordinary Least Square technique of analysis. Findings revealed that the Naira rate has a significant influence on economic growth in Nigeria.

Cooper (1971) reviewed twenty-four devaluation experiences involving nineteen different developing countries during the period 1959 – 1966. The study showed that devaluation improved the trade balance of the devaluing country but that the economic activity often decreased in addition to an increase in inflation in the short term.

Gylfason and Schmidt (1983) examined the effect of devaluation on different countries' economy. They utilized a log-linear macro model of an open economy for a sample of ten countries, using different estimates of the key parameters of the model. Their results showed that devaluation was expansionary in eight of the ten countries investigated. Devaluation was found to be contractionary in two countries (United Kingdom and Brazil).

Udeh, Ugwu and Onwuka (2016) studied the External Debt and Economic Growth: The Nigeria Experience. The ex-post research design was adopted for the study. The dependent variable was GDP, while the independent variables were external



debt stock, external debt service and exchange rate. The data were analyzed using Ordinary Least Square. The paper concluded that exchange rate fluctuation had negative impact on the Nigeria economy while external debt stock and debt service payment had negative impact on the Nigeria GDP. -

Atique and Mlik (2012) examined the impact of domestic and external debt on the economic growth of Pakistan separately over a period of 1980 – 2010 using ordinary least square approach (OLS). Their finding was that the result shows an inverse relationship between domestic debt and economic growth.

Momodu (2012) examined the correlation between debt servicing and economic growth in Nigeria. The study sought to find a relationship between the Gross Domestic Product (GDP) and Gross Fixed Capital

4.0 Data Presentation, Results and Discussion

4.1 Data presentation

Table 1: Data showing Exchange rate, Gross Domestic Product, Gross National Product and Unemployment.

| YEARS | EXR | GDP | GNP | UNP |
|-------|--------|-----------|-----------|-------------|
| 2009 | 370.00 | 89607.16 | 96526.94 | 4857427.82 |
| 2010 | 380.00 | 137354.80 | 128633.00 | 5096976.42 |
| 2011 | 320.00 | 129596.80 | 113344.00 | 5271237.01 |
| 2012 | 300.00 | 13660.80 | 122568.00 | 5402164.73 |
| 2013 | 199.00 | 101229.3 | 91862.38 | 5515412.55 |
| 2014 | 162.90 | 89054.31 | 84374.06 | 7037216.94 |
| 2015 | 161.50 | 78618.20 | 82547.50 | 6831487.79 |
| 2016 | 165.10 | 66817.72 | 74937.47 | 11494038.44 |
| 2017 | 154.80 | 58166.10 | 61746.62 | 14030495.82 |
| 2018 | 171.00 | 67918.49 | 65790.54 | 14153503.24 |

Source: CBN Statistical Bulletins for various years.

4.2 Test of Hypotheses

HO₁: Exchange rate has no significant impact on the Gross Domestic Product in Nigeria.

Table 2: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .856 ^a | .733 | .700 | 16318.38484 |

Source: Authors' computation using SPSS 16, 2021.

a. Predictors: (Constant), Exchange Rate

Table 3: ANOVA^a

Formation of Current Market Prices (GFCF). Ordinary Least Square multiple regression method was used for the analysis. The result revealed that debt payment to Nigeria creditors has significantly impacted on the GDP and GFC

3.0 Materials and methodology

The study adopted ex-post facto research design. Secondary data were collected from National Bureau of Statistics and Central Bank of Nigeria Statistical Bulletin on Gross Domestic Product, Gross National product, Exchange Rate, and Unemployment spanning from 2009 to 2018 in Nigeria.

The study utilized model: $EXR = \beta_0 + \beta_1GDP_t + \beta_2GNP_t + \beta_3UNP_t + \mu$

Descriptive statistics, some diagnostic tools and Ordinary Least Square techniques were employed in the analysis.



| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|----------------|--------|-------------------|
| 1 | Regression | 5849267347.451 | 1 | 5849267347.451 | 21.966 | .002 ^b |
| | Residual | 2130317470.204 | 8 | 266289683.775 | | |
| | Total | 7979584817.655 | 9 | | | |

Source: Authors' computation using SPSS 16, 2021

a. Dependent Variable: GDP

b. Predictors: (Constant), Exchange Rate

Table 4 : Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|--------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 25805.311 | 15740.511 | | 1.639 | .140 |
| | ExchangeRate | 300.242 | 64.062 | .856 | 4.687 | .002 |

Source: Authors' computation using SPSS 16, 2021.

a. Dependent Variable: GDP

Result from our regression analysis shows that the co-efficient of correlation (R) value is .856 coefficient of determination, R^2 , measures the extent or degree to which changes in exchange rate can be relied on to explain the changes in GDP. The (R^2) value of .733 means that one percent changes in exchange rate explains 73.3% percent of the changes in GDP.

Since our p value 0.002 is less than 0.05 we can conclude that exchange rate has a significant impact on the GDP. Therefore, the null hypothesis is rejected.

The study discovered that the exchange rate has a significant impact on the GDP based on the premise that the R^2 is .733 which implies that one percent change in exchange rate explains 73.3% change in GDP. The result of this study did not agree with that of Lawal, Atunde and Ahmed (2016) which states that exchange rate has no effect on the economic growth. Again, the findings of Udeh, Ugwu and Onwuka (2016) agreed that that exchange rate impacts on the economic growth of Nigeria, though negatively.

HO₂: Exchange Rate has no significant impact on the Gross National Product (GNP) in Nigeria.

Table 5 : Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .907 ^a | .822 | .800 | 10319.76065 |

Source: Authors' computation using SPSS 16, 2021

a. Predictors: (Constant), Exchange Rate

Table 6: ANOVA^a

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|----------------|--------|-------------------|
| 1 | Regression | 3947784916.212 | 1 | 3947784916.212 | 37.069 | .000 ^b |
| | Residual | 851979678.293 | 8 | 106497459.787 | | |
| | Total | 4799764594.505 | 9 | | | |

Source: Authors' computation using SPSS 16, 2021

a. Dependent Variable: GNP

b. Predictors: (Constant), Exchange Rate



Table 7: Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|-------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 34956.205 | 9954.312 | | 3.512 | .008 |
| | ExchsngRate | 246.659 | 40.513 | .907 | 6.088 | .000 |

Source : Authors' computation using SPSS 16, 2021

a. Dependent Variable: GNP

Table 5 above shows that the R^2 is .822 which is about 82%. The R^2 is used to explain the goodness of fit. Therefore, since R^2 is about 82%. It implies that about 82% changes in the dependent variable being the Gross National Product is explain by the independent variables and the higher for R^2 the better fit for the independent variable.

Since p value 0.000 is less than 0.001 we conclude that the exchange rate has a significant impact on the GNP. Therefore, the null hypothesis is rejected.

Table 8: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .631 ^a | .399 | .324 | 1.61459 |

Source: Authors' computation using SPSS 16, 2021

a. Predictors: (Constant), Exchange Rate

The study discovered that exchange rate has statistically significant impact on the GNP since the p value, .0000 is less than .001. This finding contrasts with that of Chris and Anyinganga (2010) in which they found an inverse relationship between the interest rate and economic growth in Nigeria.

HO₃: Exchange rate has no significant effect on unemployment in Nigeria

Table 9 : ANOVA^a

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|------------|----------------|----|-------------|-------|-------------------|
| Regression | 13.831 | 1 | 13.831 | 5.305 | .050 ^b |
| Residual | 20.855 | 8 | 2.607 | | |
| Total | 34.686 | 9 | | | |

Source: Authors' computation using SPSS 16, 2021

a. Dependent Variable: Unemployment

b. Predictors: (Constant), Exchange Rate

Table 10 : Co-efficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|---------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 8.515 | 1.557 | | 5.467 | .001 |
| | Exchange Rate | -.015 | .006 | -.631 | -2.303 | .050 |

Source : Author's computation using SPSS 16

a. Dependent Variable: Unemployment

Table 8 above shows that R^2 is .399 which is about 39.9% approximate 40%. The R^2 is used to explain the goodness of fit. Therefore, since R^2 is about 40% changes in the dependent variable being unemployment is explain by the independent variable and the higher for R^2 better fit for the independent variable.

Since p value is .05 is greater than .005 we conclude that exchange rate has no statistical significant impact on the unemployment, therefore the null hypothesis is accepted.

The study discovered that exchange rate has no statistical significant impact on unemployment. The inverse significance also occurred in the work of Atique and Maliki (2012) between domestic debt and economic growth. The result is on the premise that p value .050 is greater than .005.

5.0 Conclusion and Recommendations

Certain policy implications arose from the findings. Principal among them is that exchange rate depreciation affects GDP and GNP. It demonstrates the need for a monetary policy frame work that complements the existing exchange rate policy.

The following recommendations were proffered:

1 Micro-economic factors that tend to influence GDP should be properly managed to help in stabilizing the exchange rate to the benefit of the citizens.

2 Government should provide enabling environment to encourage individuals to put in their best to enhance the GNP which will translate to a better wellbeing of the masses.

3 There should be a deliberate effort by the government to stimulate small and medium scale enterprises so that the rising unemployment in the country can be checkmated.

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