
AN EMPIRICAL ANALYSIS OF THE NIGERIAN DILEMMA IN THE WAR OF CURRENCY DEPRECIATION FROM 1986 TO 2014

Abomaye-Nimenibo W.A.S.

Department of Economics,
Faculty of Management & Social Sciences
Obong University, Obong Ntak, Akwa – Ibom State, Nigeria.
Email: wasanim2006@yahoo.com

***Abstract:** The research paper critically investigated the effect of currency depreciation on the Nigerian economy within the period 1986-2013, employing the Augmented Dickey-Fuller unit root test, the co-integration test which indicated a long-run relationship between the dependent and independent variables with a temporary disequilibrium among the variables in the short-run. The benchmark results indicated that exchange rates do play a vital role in determining the long-run effectiveness of economic growth in Nigeria. The results further stressed that exchange rate depreciation, if regulated by market forces i.e. the interplay of market mechanisms would improve the level of Gross Domestic Product in the country. The result also further stressed that the long-run effect of exchange rate depreciation on GDP is enhanced if accompanied by contractionary fiscal and monetary policies.*

Keywords: Currency Depreciation, Exchange Rates, Economic Growth, Gross Domestic Product (GDP), Inflation Rate, Interest Rate and Government External Reserves (GER).

Reference to this paper should be made as follows: Abomaye-Nimenibo W.A.S. (2016), An Empirical Analysis of the Nigerian Dilemma in the War of Currency Depreciation from 1986 to 2014. *J. of Social Sciences and Public Policy*, Vol. 8, Number 1, Pp. 72 – 88.

INTRODUCTION

Farlex (2012), says currency depreciation is a decrease in the value of a currency with respect to other currencies; meaning that the depreciated currency is worth fewer units of some other currency. Black (2002) asserts that currency depreciation is a fall in the price of a currency in terms of other currencies. This makes a country's import relative to home produced goods, which tends to decrease imports, and it makes exports cheaper abroad, and encourages exports which are usually good for a country's balance of trade. In the pre-Babangida administration Nigerian currency was above the dollar and on par with the pound. However the naira has depreciated in value to a great extent since 1986 when Structural Adjustment Programme (SAP), under the Babangida administration was introduced. The overriding objective has been to have a realistic and stable exchange rate consistent with the internal rate of naira and to reduce the economy's dependence on the external sector but this is contrary. Exchange rate is a significant macroeconomic variable

in an economy and its behaviour affects to a large extent the behaviour of several other macroeconomic variables in an economy. This is especially so in highly import dependent economies such as Nigeria. Consequently, it is hardly surprising that most countries of the world pay close attention to the behaviour of the exchange rate of their currencies vis-à-vis other currencies of the world (Ogikhenan, 2000). Following the introduction of Structural Adjustment Programme (SAP), the Nigerian economy has begun to witness some strains which prompt the enunciation of an austerity package. As the cost of import was crippling local manufacturers, a new industrialization policy was promulgated that required goods that were hitherto imported, to be sourced and produced domestically in order to reduce the vulnerability of the economy to negative external shocks and promote the balance of payment which has helped a little. This industrialization policy was aimed at promoting the export of manufactured goods. Moreover, the post-SAP reforms period was characterized by a mixed trade policy stance while export promotion confirmed, some controls were exercised on imports. In the same vein, the foreign exchange mechanism witnessed reforms especially in the determination of the official exchange rate. Thus, the rate at the Autonomous Foreign Exchange Market (AFEM) which subsequently changed to Inter-bank Foreign Exchange Market (IFEM) rate in the late 2000 and to Dutch Auction System in 2002 (Ogikhenan and Eso, 2000).

A country's exchange rate is an important determinant of the growth of its cross-border trading and it serves as a measure of its international competitiveness (Bah and Amusa, 2003). So, the sectoral contribution to non-oil export in the period before the introduction of Structural Adjustment Programme (SAP) between 1975-1985, shows that the agricultural sector contributed about 4.0% and 67.0% to total export and non-oil export respectively (Ogun, 2004); and shares of manufacturing companies in these categories of exports are about 1.0 and 12.0% respectively during same period. In support of Bah and Amusa (2003), Adewuyi (2005) and Ogun (2004), opined that Foreign Exchange Rate plays an increasingly significant role in an economy as it directly affects domestic price level, profitability of traded goods and services, allocation of resources, investment decision, inflation, economic growth, etc. Hence, the movement in exchange rate poses serious concern not only for the monetary authorities, but also for firms engaged in international businesses. Thus, exchange rate performance depended on the type of exchange rate regime adopted by a country.

From September 1986, the value of Nigeria's national currency has been so reduced that it has worsened since the onset of the so-called Structural Adjustment Programme (SAP), aimed at making the overvalued naira exchange rate more realistic and responsive to market forces. From all indications, Nigeria's Exchange rate policy tends to encourage devaluation of the naira and this in turn encouraged import, discouraged non-oil exports and helped sustain the manufacturing sector overdependence on imported inputs. Yesufu (1996) argued that there was really no growth in the economy in real and comparative terms during the SAP period and that economic growth in local currency meant for the generality of Nigerian economic misery in real and comparative terms.

If stimulating the national growth was the predicate or foundational rationale for the devaluation of the naira, then, this has yet to occur even after over 26 years of devaluation since 1986 (Adujie's Blog, 2012). The mind bogging question is – to what extent does exchange rate depreciation impacted on economic growth (GDP) in Nigeria, and what significant relationship both has.

REVIEW OF RELATED LITERATURE

Prior to 1971 Nigeria operated a fixed exchange rate system, following the Breton wood agreement, Nigeria's exchange rate was kept constant at ₦1 = \$0.40. In the 1970s, an unprecedented changes occurred in the international financial system, such that intransigent high rate of both inflation and unemployment compounded by low productivity and instability in the industrial countries changes their exchange rate policies which design keep consumer prices low even in an era of rising world inflation. In 1972–1974, the Central Bank of Nigeria (CBN) opted to peg the Naira to US dollar even though most of Nigeria's trading partners allowed their currencies to float and stabilize at a realistic level. Shortly after the naira was pegged to the US dollar, the dollar was devalued by 10% to stimulate the US exports. This action inadvertently caused a devaluation of the naira by the same percentage, hence the exchange rate of US \$1.52 to the naira emerged, and the floating system was discontinued giving way to a system of pegging the naira to a basket of currencies. This period coincided with the oil boom era and Nigeria therefore adopted a policy that led to the growing deficits in the non-oil current account and the prevalent international inflation.

This situation was exacerbated by the pursuit of policies designed to keep consumer prices low even in an era of rising world inflation. So, the naira became overvalued in real terms and the policy of industrialization through import-substitution was translated to one of high proportion of imported input needed, for such unit of output (Onwioduokit and Nwachukwu, 1998). The slump in the world oil market in 1991, coupled with the emergence of large deficit on current account made it unwise to continue the policy that led to the appreciation of the naira. Consequently, the monetary authorities began a policy that led to the depreciation of the naira while it systematized the policy of exchange control through the use of comprehensive import licensing scheme as well as outright prohibition of some goods. This depreciation led to distortions in the system. The depreciation of the naira has several implications for economic development in Nigeria.

First, the depreciation of the naira stem imports since the increase costs arising there from would discourage importers was faulty because the economy is heavily import dependent, and the propensity to import is very high, thus the imports are price inelastic. Secondly, depreciation makes export products cheap or at least competitive in the international market, which enhances demand. These arguments did not take into account – the

elasticity of demand for the export and pricing pattern. The reality that emerged shows that Nigerian export products are fixed by the international market and are not positively correlated to changes in the naira exchange rate. Other adverse effects of depreciation include: unemployment, lack of direct foreign private investments, increased external debts, balance of payments disequilibrium and low per capita income. It also undermined the international competitiveness of non-oil export, making planning and projections difficult at both micro and macro levels. In addition business capacity utilization in Nigeria became low up to 40 percent with accumulated inventories while a number of small and medium scale enterprises were strangled as a result of the low dollar/naira exchange rate.

In a continuous search of a realistic exchange rate, the Second-tier Foreign Exchange Market (SFEM), the Autonomous Foreign Exchange Market (AFEM), Inter-bank Foreign Market (IFEM), Dutch Auction System (DAS), and the Bureau de change was established essentially to provide an institutional framework through which a realistic market determined exchange rate could evolve. In sum, SFEM was expected to make foreign exchange management in Nigeria more efficient and less costly to administer, but the operation of this market led to a huge devaluation of the naira such that from an exchange rate of ₦1.55355 to one dollar in 1986, the naira depreciated by 71 percent i.e. ₦5.3530 to \$1.00 at the last bidding session in 1988. On the average, the naira was depreciated to ₦0.7486, ₦0.7486 and ₦0.8083 to the United State dollar in 1982, 1983, and 1985 respectively. As the situation became increasingly critical the pace of depreciation increased in 1986 with the currency average being at ₦3.9696 and 19.4966 per dollar in 1992. In 1993, the average official exchange rate stood at about ₦21.8861 to \$1.00.

However, between the first for ex action in 1986 and 1994, the exchange rate depreciated by about 93 percent. The rates were however, fixed by administrative fiat at ₦21.888 to a \$1.00 from 1993 to 1999. It further depreciated to ₦103.1052, ₦120.9702, and ₦133.5004 in 2002, 2003 and 2004 respectively. In spite of the various reforms to the foreign exchange market, the unabated and unidirectional depreciation of the naira against other currency continue to give cause of concern to monetary authorities and end users of foreign exchange. While some economist attributed the naira depreciation to wrong policies implementation occasioned by lack of harmony between monetary and fiscal policies, others are of the view that movement in the external sector and the macroeconomic performance constitute the driving force behind the persistent depreciation. According to Nnanna (2000), exchange rate performance can be attributed to the repercussion of various shocks, consequent on changes in external reserves for the purpose of fiscal adjustment, domestic shocks, such as liquidity, domestic prices and other financial shocks associated with monetary instruments. Anyanwu (1997) observed that gradual and timely devaluation with adequate fiscal management could have been the key ingredient of macro-stability, but over-emphasis on exchange rate auctions and the inter-bank market as a means of ensuring continued flexibility has

resulted to exchange rate depreciation. He argued further that the US dollar, which is the most widely traded currency, is subjected to gyrations commonly unrelated to fundamentals. One wondered how can the naira that uses the dollar as a base, resist similar instability. Owolabi (1992); and Obaseki and Bello (1996) advised that, in order to reduce or eliminate the over-valuation of the naira, the inflation should be brought down through fiscal and monetary restraint and the application of appropriate supply increasing measures. Owolabi (1992) further stated that, although the market driven exchange rate has succeeded in removing the problems of over-valuation, he argued that, the problem of over-valuation is a result of over liquidity in the system resulting from expansionary fiscal and monetary developments, and the indiscipline of some speculative market operators.

Finally, to achieve a sustainable stability in the exchange rate, Olisadebe (1991) asserted that stability does not imply fixing the exchange rate but the rate should be allowed to vary in manner that should further the achievement of other macro-economic objectives. Please (1992) argued that an exchange rate policy for achieving structural transformation and long-time development is very unlikely to find a simple market determined rate adequate, particularly for a country like Nigeria, which is an enclave sector receiving large windfalls in for ex receipts from oil. Anyanwu et al, 1997, Ojinnaka, 2000; Obadan, 1993, Mulfwang, 1999, Onwoduokit and Nwachukwu, 1998 confirmed that the availability of foreign exchange earnings from oil sector provided a 'false sense' of economic well-being as well as an artificial revenue for determination or stability in the naira exchange rate is grossly unfounded because the oil prices are subject to external shocks, and are determined by OPEC.

THE EFFECT OF CURRENCY DEPRECIATION ON ECONOMIC GROWTH

Morley (1992) analyzed the effect of real exchange rates on output for 28 devaluations experiences in developing countries using a regression framework. After the introduction of controls for factors that could simultaneously induce devaluation and reduce output including terms of trade, import growth, the money supply, and the fiscal balance, he observed that depreciation of the level of the real exchange rate reduces the output. Kamin and Klau (1998) using an error correction techniques estimated the regression equation linking the output to the real exchange rate for a group of 27 countries. They did not find that devaluations were contractionary in the long term. Ndung'u (1993) estimated a six variable (Money supply, domestic price level, exchange rate index, foreign price index, real output, and the rate of interest) in an attempt to explain the inflation movement in Kenya. He observed that the rate of inflation and exchange rate explained each other. A similar conclusion was also reached in the extended version of this study by Ndung'u, in 1997. Rodriguez and Diaz (1995) estimated a six variable VAR- output growth, real wage rate, exchange rate depreciation, inflation, monetary growth, and the Solow residuals- in an attempt to decompose the movement of Peruvian output. They

observed that output growth could mainly be explained by "own" shocks but was negatively affected by increases in exchange rate depreciation as well.

THE CONCEPT OF EXCHANGE RATE

Exchange rate is simply the price of foreign currency which chars the foreign exchange market (Hossain, 2002). Therefore, exchange rate currency is the link between domestic and foreign prices of goods and service. Also, exchange rate can either appreciate or depreciate. Appreciation in the exchange rate occurs if less unit of domestic currency exchanges for a unit of foreign currency while depreciation in exchange rate occurs if more unit of domestic currency exchanges for a unit of foreign currency.

EFFECT OF EXCHANGE RATE ON DEVELOPING NATIONS

The following have been adduced as the effect of exchange rate on economic growth of many developing nations from the research carried out by Roderick (1993), Ajakaiye (2002) and Afolabi (2006).

i. **Increase in foreign exchange earnings**

The foreign exchange reserve of a country is responsive to its exchange rate which has a multiplier effect on then economic growth of a country. When there is more export due to increase in value of a country's currency, this would increase the foreign exchange reserve of the country at the Central Bank. However, in Nigeria, the foreign exchange reserve has not translated to enhanced economic growth due to low exports and more imports.

ii. **Appreciation of National Currency**

Increase in foreign exchange according to Afolabi (2006) would strengthen the value of national currency in relation to the other currencies being traded in the foreign exchange market. This would also lead to increase in the confidence of investors to trade in the national currency. However, this has not worked out for Nigeria as the naira is being weakened day in day due to high level of corruption and capital flight ravaging the economy.

iii. **Inflation**

Increase in external reserve was supposed to dampen the inflationary effect in the economy. Unfortunately, the reserve has been the case in Nigeria as more Nigerian naira is being spent on imported goods.

iv. **High Cost of Maintenance**

Foreign exchange rate management usually leads to a country procuring high debt through loans from the International Monetary Fund (IMF) or the World Bank to finance it projects. In Nigeria for example, when the naira becomes weak compared to other currencies like dollar or pound and there is the need to transact foreign trade she would require extra cost in

floating these other currencies for effective trade deals. This has also led to exposure to transaction risk, commercial risk and political risk.

EMPIRICAL LITERATURE

Previous research on the impact of exchange rate on economic growth has reached contrasting results. For example, Empirical confidence showed that real exchange rate variations can affect growth outcomes. Asher (2012) examined the impact of exchange rate fluctuation on the Nigeria economic growth for the period 1980–2010. The result showed that real exchange rate has a positive effect on the economic growth. In a similar study, Akpan (2008) investigated foreign exchange market and economic growth in an emerging petroleum based economy from 1970–2003 in Nigeria. He found that positive relationship exists between exchange rate and economic growth. Edwards and Levy Ye Yati (2003) found evidence that countries with more flexible exchange rate grow faster. Faster economic growth is significantly associated with real exchange rate depreciation (Hausmann, Pritchett, and Rodrik 2005). Rodrik (2009) argued that real undervaluation promotes economic growth, increases the profitability of the tradable sector, and leads to an expansion of the share tradable in domestic value added. He claims that the tradable sector in developing countries can be too small because it suffers more than the non-tradable sector from institutional weaknesses and market failures.

A real exchange rate undervaluation works as a second-best policy to compensate for the negative effects of these distortions by enhancing the sector's profitability. Obansa, Okoroafor, Aluko and Millicent (2013) also examined the relationship between exchange rate and economic growth in Nigeria between 1970 and 2010. The result indicated that exchange rate has a strong impact on economic growth. They concluded that exchange rate liberalization was good to Nigerian economy as it promotes economic growth. Azeez, Kolapo and Ajayi (2012) also investigated the effect of exchange rate volatility on macroeconomic performance in Nigeria from 1986–2010. They discovered that exchange rate is positive relative to Gross Domestic Product. Arize, Osang, and Slottje (2000) found a significant negative relationship between increases in exchange rate volatility and exports in developing countries. Serven (2003) showed that real exchange rate volatility negatively affects investment in a large panel of developing countries. This negative impact is significantly larger in countries with highly open economies and less developed financial systems. He also found evidence of threshold effects, whereby uncertainty only matters when it's relatively high. A similar study by Eme and Johnson (2012) investigated the effect of exchange rate movements on real output growth in Nigeria for the period 1986–2010. The result revealed that there is no evidence of a strong relationship between changes in exchange rate and output growth. Rather, Nigeria economic growth has been directly affected by monetary variables.

METHOD OF STUDY

We rely heavily on secondary data sourced from Central Bank of Nigeria (CBN), Statistical Bulletin and National Bureau of Statistics (NBS). The data on exchange rate, inflation rate, interest rate, Gross Domestic Product (GDP), and Government External Reserves are collected by an extraction method from CBN statistical bulletin between 1986 and 2013. We used empirical analysis to examine the challenges as well as the impact of currency depreciation in Nigeria.

Model Specification

The econometric model of multiple regression analysis was used to test the relationship between the dependent and independent variables. For the purpose of this study, this model was modified such that, Gross Domestic Product (GDP) is a function of exchange rate (EXCH), inflation rate, interest rate and Government External Reserves (GER). This functional relationship can be specified in linear form as thus:

$$GDP = F (EXCH, INF, IR, GER)$$

Mathematical Equation

$$\text{LOG (GDP)} = \beta_0 + \beta_1\text{EXCH} + \beta_2\text{INF} + \beta_3\text{IR} + \beta_4\text{LOG (GER)}$$

Econometrics Equation

$$\text{LOG (GDP)} = \beta_0 + \beta_1\text{EXCH} + \beta_2\text{INF} + \beta_3\text{IR} + \beta_4\text{LOG (GER)} + \mu$$

Where:

GDP = Gross Domestic Product

EXCH = Exchange Rate

INF = Inflation Rate

IR = Interest Rate

GER = Government External Reserves

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = Co-efficient of the respective independent variable.

U = Error Term

LOG = Logarithm

TEST AND VALIDITY AND RELIABILITY OF THE STUDY

The multiple Regression technique, OLS technique were used to ascertain the validity and reliability of the parameter estimates, based on three criteria viz – Economic Apriori Criteria, Statistical Criteria and Econometric Criteria.

DISCUSSION OF RESULT

Using the Augmented Dickey–Fuller (ADF) unit root test on all the data series adopting the 5% critical level of the Dickey–Fuller (DF) critical table values:

$$H_0: \delta=0 \quad \text{or } P = 1 \text{ (The variables are non-stationary)}$$

H1: $\delta \neq 0$ or $P \neq 1$ (The variables are stationary)

TABLE 1: UNIT ROOT TEST FOR VARIABLES

VARIABLES	ADF TEST STATISTICS	5% CRITICAL LEVELS	LEVEL OF INTEGRATION
EXCH	-4.920313	-2.981038	I(1)
INF	-3.148957	-3.004861	I(1)
IR	-3.135469	-3.004861	I(1)
LOG(GER)	-5.418280	-2.991878	I(1)
LOG(GDP)	-4.296386	-2.981038	I(1)

The result show that at 5% critical value, EXCH(Exchange rate), INF (Inflation rate), IR (Interest rate), GDP and GER(Government external reserve) is stationary at 1st difference and are all integrated at order one I(1). This result is expected, since data is non-stationary at zero form.

We therefore, go further to carry out co-integration test to show that, although most of our variables are non-stationary series, a long-term relationship or equilibrium exist between them i.e. the variables are co-integrated.

COINTEGRATION TEST

The Co-integration tests proved that combination of such variables has a long-term equilibrium or relationship.

Hypothesized No. of (EC)s	Eigen Value	Likelihood Ratio	5% Critical Value
None*	0.852562	112.7067	69.81889
At most 1*	0.631745	62.93374	47.85613
At most 2*	0.500864	36.96029	29.79707
At most 3*	0.341968	18.89352	15.49471
At most 4*	0.265211	8.012470	3.841466

From the above results, it is quite clear that the co-integration test indicates that there are co-integrating equations at 5% level, thus implying a long-run relationship among the variables; while in the short run, there can be temporary disequilibrium among the variables.

ESTIMATION OF OUTPUT AND INTERPRETATION

Variables	Coefficient	Standard Error	T-Statistic	Probability
EXCH	0.027497	0.004071	6.753695	0.0000
INF	0.017100	0.009789	1.746902	0.0940
IR	-0.061837	0.038277	-1.615492	0.1198
LOG(GER)	0.092215	0.246187	0.374575	0.7114
C	11.82510	4.005824	2.951977	0.0072

Abomaye-Nimenibo W.A.S.

$$R^2 = 0.875177$$

$$\text{Adjusted } R^2 = 0.853469$$

$$F - \text{Statistic} = 40.31537$$

$$\text{Durbin Watson} = 0.567318$$

$$\text{Prob (F)} = 0.000000$$

A unit change in the level of EXCH on the average leads to about 0.027497 unit change in GDP. Also, a unit change in the level of inflation rate (INF) on the average leads to about 0.017100 unit change in GDP which is also an increase. A unit change in the interest rate (IR) leads to 0.061837 unit changes in GDP showing a decrease in GDP. Also, a unit change in government external reserve (GER) leads to about 0.092215 unit changes in GDP showing an increase. The positive and negative relationships with economic growth measured with GDP, are not all statistically significant. The value of R^2 which is 0.875177 reveals that only 87.51% of the variation in GDP is explained jointly by variations in the explanatory or independent variables.

The Student T-Test showed the significance of the parameter estimates by comparing the values of the calculated t-statistic and the critical t-values at 5% level of significance.

The critical value of no tail test is obtained from the student t-table for $\alpha/2$ level of significance and $(n-k)$ degrees of freedom (df).

$$\alpha = 5\%$$

$$\alpha/2 = 0.05/2 = 0.025$$

$$k = \text{number of parameters including the intercept in the regression (28)}$$

$$n = \text{number of observations (5)}$$

Reject H_0 if $|t| > 2.06866$, $(n-k)$ and accept otherwise

$$n - k = 28 - 5 = 23$$

$$df = t_{0.025,23} = 2.06866$$

Variables	T-statistic /t/	Critical value	Decision Rule	Conclusion
Constant	2.951977	2.06866	+ > 2.06866	Statistically significant
EXCH	6.753695	2.06866	+ > 2.06866	Statistically significant
INF	1.746902	2.06866	+ < 2.06866	Statistically not significant
IR	-1.615492	2.06866	+ < 2.06866	Statistically not significant
LOG(GER)	0.374575	2.06866	+ < 2.06866	Statistically not significant

The F-Test showed the joint significance of the parameters. The T-value provides a test of the H_0 that the true slope coefficients are simultaneously zero.

That is:

$$H_0: \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$$

$$H_1: \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$$

DECISION RULE:

F-Statistic	F0.05, (4,23)	Decision Rule	Conclusion
40.31537	2.79554	$F_{cal} > 2.79554$	Statistically significant

Since the F-statistic (F_{cal}) is greater than the critical value at 5% level of significance, we reject the null hypothesis (H_0) and conclude that the variables are jointly statistically significant.

ECONOMETRIC CRITERIA TESTS

Multicollinearity Test revealed that there is the presence of multicollinearity and it is normal and tolerable.

Test for autocorrelation: In testing for auto correlation, the Durbin Watson d-test was used. Hence, we compare the established lower limit d_L and upper limit, d_U of Durbin – Watson based on 5% level of significance and k degrees of freedom. Where k = number of explanatory variables excluding the constant. To test for autocorrelation (AC), we make use of the Amended Durbin–Watson Statistic. The hypothesis is thus stated:

$H_0: d_U < d < 4 - d_U$ - There is no autocorrelation

DECISION CRITERIA

Accept H_0 if $d_U < d < 4 - d_U$ and reject if otherwise.

Since $d_U > d < 4 - d_U$ i.e. $4 - d_U = 4 - 1.8502 = 2.1498$

Since, $1.8502 > 0.567318 < 2.1498$, we do not accept the H_0 and concluded that there is a positive autocorrelation between the regressands and regressor.

Heteroscedasticity Test: White's general heteroscedasticity test in which the residuals follow chi-square (χ^2) distribution with degrees of freedom equal to the number of regressors (excluding the constant) is used.

$H_0: \beta_i = 0$ - There is no heteroscedasticity

$H_1: \beta_i \neq 0$ - There is heteroscedasticity

Reject H_0 if the computed $n.R^2 > \chi^2_{tab}$, do not reject otherwise at 5% level of significance.

The result of the heteroscedasticity test is summarized for each model as follows:

Therefore, $n.R^2 = 28(0.679912)$

$= 19.03754$

Since there is heteroscedasticity, we concluded that the errors in the regression result do not have constant variance.

χ^2 tab at 5% level of significance with 8 degrees of freedom (df) gives 15.5073 from the chi-square (χ^2) distribution table.

Since $n.R^2 > \chi^2_{0.05,8}$, the null hypothesis is not accepted and we concluded that the errors in the regression result does not have constant variance.

SUMMARY

1. Our test was in agreement with Gujarati (2004), that the correlation coefficient is in excess of 0.8, which indicated a multicollinearity as per the correlation matrix table in the appendix, meaning that there is the presence of multicollinearity and it is normal and tolerable attesting that currency depreciation has multiple effect on the economy of our nation.
2. The F-Test statistic got showed the joint significance of the parameters.
 1. The coefficient of determination showed the proportion of the variation in the dependent variable LOG (GDP) which unveiled that the value of R^2 which is 0.875177 i.e. only 87.51% of the variation in GDP is explained jointly by variations in the explanatory or independent variables.
 2. By Co-integration tests there exists a long-term equilibrium or relationship among the variables, i.e. the dependent and independent or explanatory variables.
 3. It was also revealed that a unit change in the level of EXCH on the average leads to about 0.027497 unit change in GDP. Also, a unit change in the level of inflation rate (INF) on the average leads to about 0.017100 unit change in GDP. Furthermore, a unit change in the interest rate (IR) leads to -0.061837 unit change in GDP. Moreover, a unit change in government external reserve (GER) leads to about 0.092215 unit change GDP. Although they have both positive and negative relationships with economic growth measured with GDP, they are not all statistically significant.
 4. The Coefficient of Determination (R^2) which is 0.875177 reveals that only 87.51% of the variation in GDP is explained jointly by variations in the explanatory or independent variables.
 5. Since the F-statistic (F_{cal}) is greater than the critical value at 5% level of significance, we reject the null hypothesis (H_0) and conclude that the variables are jointly statistically significant.
 6. There exist a relationship between currency depreciation and exchange rate vis-a-vis other variables that bring to bear on the GDP (the economy); which implies that the value of the naira has to be bolstered as quickly as possible.

CONCLUSION

Exchange rate depreciation no doubt is a fast growing economic problem in Nigeria seeking quick and critical attention. We found that depreciation of currency affects the interest rate, inflation rate, exchange rate and government external reserves which in turn determine the soundness and vibrancy of a nation's economy. The forces of demand and

supply ascertain the extent to which currency depreciation impacts on Nigeria's economy. From our statistical analysis, it is crystal clear from the student T-test that exchange rate shows a significant relationship with economic growth (GDP). The government should seek measures on how the naira can be revalued so as to gain international respect.

RECOMMENDATION

1. Concerted efforts must be put in place by the Government to ensure the existence of consistent monetary and fiscal policy.
2. Efforts must also be geared towards reducing corruption substantially so as to make the government expenditure more productive as both monetary and fiscal policies are found to promote output.
3. Efforts should be geared towards increasing the nation's foreign exchange reserves. Increase in reserves ensures some level of stability in the exchange rate thereby enhancing the central bank's ability in meeting high foreign exchange demand.
4. Government consumption expenditure should be carried out in a manner that it encourages and promotes investment and increase domestic demand.
5. Government and policy makers should employ policies, so as to increase productivity in all sectors of the economy as well as grant subsidies to local producers to aid business growth to avoid borrowing from the International Monetary Fund with its conditionality of currency devaluation.
6. Government should borrow from her citizens/nationals than borrowing outside.

REFERENCES

- Adeyuyi, A.O. (2005). *Trade Policy Technological and Total Factor Productivity Growth Dynamic: Evidence from Nigeria "NISER Monographs Series No. 10, NISER Ibadan*
- Adeyuyi, A.O. (2005). *Trade and Exchange Rate Policy Reform Export Performance of the Real Sector. The Case of Nigeria Selected Papers for the 2005 Annual Conference of the Nigeria Economic Society.*
- Adujie, P.I. (2012). *TAGGED WITH NAIRA: 26 YEARS OF DEVALUATIONS WITHOUT BENEFITS; THE VEXING ISSUES OF OUR NATIONAL CURRENCY. Just another wordpress.com weblog.*
- Afolabi, L. (2006). *Theory of Monetary Economics, Ibadan: University Press Ltd.*
- Aghion, P., Bacchetta, P., Ranciere, R., and Rogoff, K., (2009). *Exchange Rate Volatility and Productivity Growth: The Role of Financial Development. Journal of Monetary Economics 56(4): 494-513*

Abomaye-Nimenibo W.A.S.

- Ajakaiye, D. (2002). *Economic Development in Nigeria: A Review of Experience*, CBN Bullion, Vol-26. Pp. 4664. CBN Annual Reports of Accounts (Various Issues) 2000-2012.
- Akpan, P.L. (2008). *Foreign Exchange Market and Economic Growth in an Emerging Petroleum Based Economy: Evidence from Nigeria (1970-2003)*. *Africa Economic and Business Review* 6(2), 46-58.
- Aijyu, S.R.U. (2011). *Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation*, *Research Journal of International Studies*.
- Anifowose. O.K. (1997). *Management of Foreign Exchange: A Peep in to the Next Decade*. CBN Bullion, 21(4).
- Anyanwu, J.C. (1997). *The Structure of Nigerian Economy (1960-1997)*. Onitsha: Joannee Education Publishing Limited.
- Asinya. F.A. (2004). *Determinants of Exchange Rate Depreciation and Macroeconomic Management in Nigeria*. Unpublished M.sc Project-University of Calabar.
- Arize, A.C, Osang, T. and Slottje D.J. (2000). "Exchange Rate Volatility and Foreign Trade: Evidence from Thirteen LDCs." *Journal of Business and Economic Statistics* 18(1): 10-17
- Asher, O.J (2012). *The Impact of Exchange Rate Fluctuation on the Nigeria Economic Growth (1980-2010)*. Unpublished B.sc Thesis of Caritas University Emene, Enugu State, Nigeria.
- Azeez, B.A., Kolapo, FT. and Ajayi, L.B (2012). *Effect of Exchange Rate Volatility on Macroeconomic Performance in Nigeria*. *Interdisciplinary Journal of Contemporary Research in Business*. 4(1), 149-155.
- Bahmani-Oskooee, M. (2002). "Are Devaluations Contractionary in Asia?", *Journal of Post Keynesian Economics*, Vol.25, pp. 67-81.
- Bahmani-Oskooee, M. and Miteza, I. (2006). "Are Devaluations Contractionary? Evidence from Panel Co-Integration", *Economic Issues*, 11, 49-64.
- Central Bank of Nigeria (1991). *Nigeria's Exchange Rate Policy*. CBN Research Department.
- Chou, L.W. and Chao, C.C. (2001). "Are Currency Devaluations Effective? A Panel Unit Root Test", *Economics Letters*, Vol. 72, pp. 19-25.

- Christopoulous, D.K. (2004). "Currency Devaluation and OUTPUT Growth: New Evidence from Panel Data Analysis", *Applied Economics Letters*, Vol.11, pp. 809-813.
- Edwards, S. (1986). "Are Devaluations Contractionary?" *The Review of Economics and Statistics*, Vol.68, pp 501-7.
- Edwards, S. and E. Levy - Yeyati (2003), "Flexible Exchange Rates and Shock Absorbers", *NBER Working Paper 9867*.
- Erne, O.A and Johnson A.A (2012). *Effect of Exchange Rate Movements on Economic Growth in Nigeria. CBN Journal of Applied Statistics*. 2(2), 1-28.
- Essien, E.A (2005). *Exchange Rate Pass through to Inflation in Nigeria "West African Journal of Monetary and Economic Integration (first half) Vol.5, Number 1. African Money Institute*.
- Farlex (2012). *Financial Dictionary: Farlex, Inc. All Rights Reserved*.
- Granger, C.W.J. (1986). *Developments in the study of Co-Integrated Economic Variables, Oxford Bulletin of Economics and Statistics*.
- Granger, W.J. and Newbold, P. (1974). *Spurious Regression in Econometrics, Journal of Econometrics*.
- Gujarati, D.N. (2009). *Basic Econometrics, 5th international Edition: McGraw Hill Higher Education, United States*.
- Gujarati, D. and Sangeetha, S. (2007). *Basic Econometrics (SIE) 4th Edition. McGraw Hill Book Company*.
- Gujarati, D.N. (2004). *Basic Front Matter Introduction. The McGraw-Hill Econometrics, Fourth Companies, 2004 Edition BASIC ECONOMETRICS 1*.
- Gylfason, T. and Risager, O. (1984). "Does Devaluation Improve the Current Account?" *European Economic Review*, Vol.25, pp. 37-64.
- Gylfason, T. and Schmid, M. (1983). "Does Devaluation Cause Stagflation?" *Canadian Journal of Economics*, Vol.16, pp. 641-54.
- Hausmann, R., Pritchett, L, and Rodrik, D., (2005). "Growth Accelerations." *Journal of Economic Growth* 10(4): 303-29
- Hossain, A. (2002), "Exchange Rate Responses to Inflation in Bangladesh," (Washington D. C., IMF Paper No. Wp/O2/XX).

Abomaye-Nimenibo W.A.S.

Immole, B. and Emma, A. (2011). *Exchange Rate Depreciation and Inflation in Nigeria (1986- 2008)*. *Business and Economic Journal*.

Jhinghan M.L (2003). *11th Ed. Macro-Economic Theory Vrinda Publication Ltd*.

Krugman, P. and Taylor, L. (1978). "Contractionary Effect of Devaluation", *Journal of International Economics*, Vol.8, pp. 445-56.

Koutsoyiannis H.L. (1997). *The Political Economy of Growth*, Monthly Review Press: New York

Morley, S.A. (1992). "On the Effect of Devaluation during Stabilization Programs in LDCs. " *Review of Economics and Statistics* 74, no. 1: 21-27.

Mulfwang, P.M. (1999). *The State, Oil and Socio-Economic Transformation in Nigeria. An Artificial Appraisal. A Pengassan-NNPC publication, Lagos*,

Ndung'u N., (1993). "Dynamics of the Inflationary Process in Kenya." *Goteborg, Sweden: University of Goteborg*.

Ndung'u N., (1997). *A VAR Analysis of Kenya's Monetary Policy Transmission Mechanism: How Does the Central Bank's REPO Rate Affect the Economy? IMF Working Paper, African Department WP/06/300*.

Nnanna, O.J. (2002). *Monetary Policy and Exchange Rate Stability in Nigeria. Proceedings of a One-Day Seminar by Nigeria Society, Lagos*.

Obadan, M.I. (1992). *Nigeria's Exchange Rate Policy Management NCEMA Paper, Series 5*.

Obansa, S.A.J., Okoroafor, O.K.D., Aluko, O.O., and Millicent Eze (2013). *Perceived Relationship between Exchange Rate, Interest Rate and Economic Growth in Nigeria: 1970-2010. American Journal of Humanities and Social Sciences: 1(3), 116-124*,

Obaseki, P.J. (1991). *Foreign Exchange Management in Nigeria, Past, Present and the Future. A Paper Presented at a Seminar for Staff of CBN Research Department, Lagos*.

Oḡusola, A.F. and Akinlola, A.E. (2001). "Output, Inflation, and Exchange Rate in Developing Countries: An Application to Nigeria." *The Developing Economies, Japan*, Vol. 39 No.2.

Ojinnaka, I. P. (2000). *Development in the Petroleum Sub-Sector and their Impacts on the Nigerian Economy CBN Bullion. (24) 3*

Ojo, M.O. (1992). *Exchange Rates Development in Nigeria. A Historical Perspective. Ijebu Ode. Nigeria: UNILAG Consult*.

- Olisadebe, E.U. (1991). *Appraisal of Recent Exchange Rate Policy Measures in Nigeria*. *CBN Economic and Financial Review*, 29(2).
- Oloba, O. and Abogan, P. (2013). *Exchange Rate Volatility in Nigeria: Evidence from a Parametric Measures (1986-2013)*. *Australian Journal of Business and Management Research (AJBMR)* 3(5) 12-17.
- Onwioduokit, E.A. & Nwanchukwu, N.E. (1998). *Sector/A/ Response to Exchange Rate Policy in Nigeria: A Case Study of Agricultural Management*. *CBN Bullion* (2)2.
- Rodrik, D. (2009). *The Real Exchange Rate and Economic Growth*, Harvard University, Cambridge, September.
- Roderick, C. (1993). *Getting Intervention Right: How South Korea and Taiwan Grew Rich*, NBER Working Papers No 4964.
- Rodríguez, G.H., and Díaz G.G. (1995). *"Fluctuation Macroeconomics En la Economía Peruana"* Working Paper. Lima: Banco Central de Reserva del Perú.
- Rogers, J.H., and Wang, P. (1995). *"Output, Inflation and Stabilization in a Small Open Economy: Evidence from Mexico."* *Journal of Development Economics* 46, no. 2: pp 271-293.
- Serven, L. (2003). *"Real Exchange Rate Uncertainty and Private Investment in LDCs."* *Review of Economics and Statistics* 85: 212-218
- Yesufu, T.M. (1996). *The Nigerian Economy: Growth without Development*, *Benin Social Stories for Africa*, University of Benin, Benin City, 89-110.