Exchange Rate Volatility and the Nigerian Balance Of Payments (1981-2016)

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ABSTRACT

The paper investigates the impact of exchange rate volatility on balance of payments in Nigeria using data from 1981 to 2016. The main objective of this study is to examine the extent to which exchange rate volatility measures have influenced the Balance of Payment (BOP) position in Nigeria during the period under study. The study utilized aggregate annual data from 1981 to 2016. The data was analysed with the co-integration/error correction model (ECM) method. The test for stationary using Augmented Dickey Fuller (ADF) showed that all the variables were not stationary in levels but were stationary in first difference. The Johansen-Juselius co-integration techniques were employed in testing for long run equilibrium relationship among the variables and the results indicated that co-integrating relationship was found among the variables. Findings from this study indicate that the systematic variation in the dependent variable (BOP) is explained by the four independent variables including nominal exchange rate, inflation rate, real interest rate and government expenditure. The result also reveals that there is long run relationship between exchange rate volatility and BOP. The paper concluded discouragement of over-reliance on imported goods and the promotion of domestic export produce is very imperative. This can only be achieved if the Nigerian economy is diversified and entrepreneurial development promoted in the country. In addition, the government should encourage export promotion strategies in order to

maintain a surplus balance of trade which will help make the domestic currency strong and also prevent further depreciation of the Nigeria naira.

Keywords: Balance of Payment (BOP), ECM, Exchange rate volatility, Nigeria.

INTRODUCTION

In macroeconomic management, exchange rate policy is an important tool. This is derived from the fact that changes in the rate of exchange have significant implications for a country's balance of payments position and even its income distribution and growth. It aids international exchange of goods and services as well as achieving and maintaining international competitiveness and hence ensures viable balance of payment position. It serves as an anchor for domestic prices and contributes to internal balance in price stability (CBN, 2011). It is not surprising therefore, that monetary authorities attach much importance to proper management of a country's foreign exchange since its behaviour is said to determine the behaviour of several other macroeconomic variables (Oyejide, 1989). It is even more so for Nigeria which had embarked on a course of rapid economic growth with its attendant high import dependency. In this way, the choice and management of an exchange rate regime is a critical aspect of economic management to safeguard competitiveness, macroeconomic stability, and growth (Cooper, 1999).

PURPOSE OF RESEARCH

This study wishes to investigate the extent to which exchange rate volatility influenced the balance of payment in Nigeria during the period of 1981 to 2016. Hence, the following research questions seek to be answered;

> 1.   Does exchange rate volatility significantly affect balance of payment in Nigeria?

> 2.   What is the nature of relationship between exchange rate volatility and BOP in Nigeria?

> 3.   Does interest rate significantly influence balance of payment in Nigeria?

RESEARCH JUSTIFICATION

The Nigerian economic development is facing imbalance (or deficit) of balance of payments for over decades which had resulted to poor state of the economy. The disequilibrium in the country's balance of payments account have generated questions concerning the causes, its impact on social progress and what policies to adopt to achieve favourable balance of payments position. Aniekan (2013), attributed the disequilibrium to

disturbances in monetary variable while the African research (2011), stated that improper allocation and the misuse of domestic credit, fiscal indiscipline and lack of appropriate expenditure control policies due to centralization of power in the hands of the government can be blamed. Regardless of cause, BOP disequilibrium is a reflection of disequilibrium in the money market (IMF, 2000). Monetary disequilibrium produces adverse effect on the aggregate expenditure for goods and services (absorption) in the sense that, if the public has an excess supply of money it gets rid of it by passing its excess cash balance to foreign countries in exchange for goods and services. If the public desires to keep more money than it has in stock, it achieves it by reducing absorption and ultimately passes goods and services on in foreign countries in exchange for money. The continual variations in the exchange rate of the Nigerian economy suggests a requirement to stimulate current account balance in the country.

AIM AND OBJECTIVES

The broad objective of this study is to ascertain the effect of exchange rate volatility on balance of payment in Nigeria. The specific objectives are as follows;

1. To determine the significant effect of exchange rate volatility on the BOP position in Nigeria.
2. To investigate the nature of relationship between exchange rate volatility and BOP in Nigeria.
3. To determine the significant effect of interest rate on BOP in Nigeria.

HYPOTHESES OF THE STUDY

1. Exchange rate volatility does not have significant impact on BOP in Nigeria.
2. There is no relationship between exchange rate volatility and BOP in Nigeria
3. Interest rate does not significantly influence the BOP position in Nigeria.

THEORETICAL FRAMEWORK

The absorption theory of balance of payment on which the theoretical framework is based postulates that devaluation would only have positive effects on the balance of trade if the propensity to absorb is lower than the rate at which devaluation would induce increases in the national output of goods and services. It therefore advocates the need to achieve deliberate reduction of absorption capacity to accompany currency devaluation. The basic tenet of this approach is that a favourable computation of price elasticity may not be enough to produce a balance of payments effect resulting from devaluation, if devaluation does not succeed in reducing domestic expenditure. The approach dwells on the national income relationship developed by Keynes and it tries to find out its implication on balance of payments (Machlup, 1956).

Now, consider an open economy, the national income accounting framework shows income (Y) as the sum of consumption (C), investment (I), Government Expenditure (G) and Exports less Imports or balance of trade (X - M):

$$Y = C + I + G + (X-M) \qquad (1)$$

Where C + I + G are often referred to as absorption and are represented as domestic absorption (A). Therefore, equation (1) is restated as follows:

$$Y = A + (X - M) \qquad (2)$$

$$Y - A = (X - M) \qquad (3)$$

Equation (3) implies that each time domestic absorption A is greater than the domestic output (Y), imports will be greater than exports. It is either A > Y or M > X.

MODEL SPECIFICATION

The specification of appropriate econometric model boarders on the prevailing economic circumstances and the availability of economic data relating to the variables being examined (Koutusoyiannis, 1997). Therefore, following the absorption approach being stated Eq. 2 above, a suitable model is specified to harness the degree and direction of exchange rate volatility on balance of payment in Nigeria. Thus, the model for this study can be specified as:

$$BOP = f(NER, INFL, RIR, GEX) \qquad (4)$$

The econometric form of the model above is stated as:

$$BOP_t = \beta_0 + \beta_1 NER_t + \beta_2 INFL_t + \beta_3 RIR_t + \beta_4 GEX_t + U_t \qquad (5)$$

Where; BOP = balance of payment (proxied by current account balance); NER = nominal exchange rate; INFL = inflation rate; RIR = real interest rate; GEX = government expenditure; U_t = Error term.

The ECM for this study can be specified as:

$$\Delta BOP_t = \beta_0 + \beta_1 NER_{t-i} + \beta_2 INFL_{t-i} + \beta_3 RIR_{t-i} + \beta_4 GEX_{t-I} + \varepsilon ECM_{t-I} + U_t \qquad (6)$$

The coefficient of error correction term is expected to be negative ($\varepsilon<0$) and significant as this is require to ensuring the existence of long run relationship and adjusted disequilibrium in the model (Narayan, 2005). Similarly, the ECM_{t-1} denotes the one period lagged error correction term. It measures the effectiveness of the adjustment mechanism in stabilizing disequilibrium in the model. The value of its coefficient measures the speed of adjustment to equilibrium from the short run disequilibrium in the model.

A Priori Expectation: A priori expectation in this study will be evaluated based on the following criteria;

Economic criterion:

The test is aimed at determining whether the signs and sizes of the results are in line with what economic theory postulates. In other words, it is concerned with determining the consistency of our parameter estimate with the signs and magnitude. As such it is our expectation that the parameter estimate of our study must be consistent with this signs and magnitude. Therefore, the variables under consideration, their parameter and a priori signs can be expressed as follows;

$\beta_0>0$, $\beta_1<0$, $\beta_2<0$, $\beta_3>0$, $\beta_4>0$, where B_0 = constant term; β_1 = coefficient of nominal exchange rate; β_2 = coefficient of inflation; β_3 = coefficient of real interest rate; β_4 = coefficient of government expenditure.

Statistical Criterion (First Order Test):

These tests are set of statistically theory used in evaluating the reliability of the parameter estimates. According to Guajarati (2004), a test of significance is a procedure by which sample result is used to verify the truth or falsity of a null hypothesis. It has the following tests;

i. Standard Error Test: This test is important due to the fact that the estimates obtained from a given set of a simple observation are not free from sampling errors. It is therefore necessary to measure the size of the error and subsequently determine the degree of confidence in the validity of the obtained estimates. The test helps us to know if our estimates are statistically significant or whether the sample from which we made estimates might have come from a population whose true parameter value are zero (Kautsoyiannis, 1977-80).

ii. The T-Test: This is used to test the significance of the individual parameters of the regression model. This will be used in testing the statistical significance of each regression coefficient at a given level of significance with $N - K$ degree of freedom and in this case, we will use 5% level of significance and it is given as; $+t_{\alpha/2\,(N-K)}$. Where; $+t$ = t –critical, α = level of significance N = Sample size K = total number

of estimated parameters. Decision Rule If $+t_{cal} < +t_{\alpha/2\ (N-K)}$ at a given level of significance, we accept H_0 and reject H_1 but if $t_{cal} > +t_{\alpha/2\ (N-K)}$ we reject H_0 and accept H_1. On the other hand, if $-t_{cal} < -t_{\alpha/2\ (N-K)}$ at a given level of significance, we reject H_0 and accept H_1 but if $-t_{cal} > -t_{\alpha/2\ (N-K)}$ we accept H_0 and reject H_1.

iii. F – Test: This involves the overall significance of the regression result as against individual significance 0f the regressions. This test can be said to be a join hypothesis test employing the analysis of variance (ANOVA). Thus if the computed F – test is greater than the critical value of $F_{\alpha\ (K-1)\ (N-K)}$, then we say it is significant.

iv. R^2 and adjusted R^2 test: The R^2 (multiple coefficient of determination) shall be carried out to the strength of the independent variables in explaining the changes in the dependent variables. Gujarati (2004:217) has noted that changes in the adjusted R^2 should be treated as another summary statistic. The R^2 is reported as the multiple coefficient of determination adjusted to take into account the degree of freedom associated with the sum of square

Econometrics Criterion (Second Order Test)

There is test set by the theory of econometrics and aimed at investigating whether the assumptions of econometric method employed are satisfied or not, for the purposed of this study, we will test only for Autocorrelation.

i. Auto-Correlation Test: This is used to test if the errors corresponding to different observation are uncorrelated; testing for the randomness of the error term. Thus, the Durbin-Watson (DW) method was employed for this test.

Estimation techniques

The study adopted an error correction model as it main tool of analysis. The idea was to avoid difficulties that may arise while performing regression with clearly non-stationary series thus leading to the so called spurious results. In order to avoid such result, this study adopted Augmented Dickey Fuller (ADF) test for our unit root in order to attain stationary and thereafter, the study employ the use of co-integration test so as to ascertain the long run relationship between variables employed for this study. Lastly, ECM is employed to correct any form of dis-equilibrium in the short run.

Trend Analysis

In this section, we examine the trend behaviour of the variables of interest employed in this study over time. The aim is to investigate the nature of variations of the variables of interest in the study.
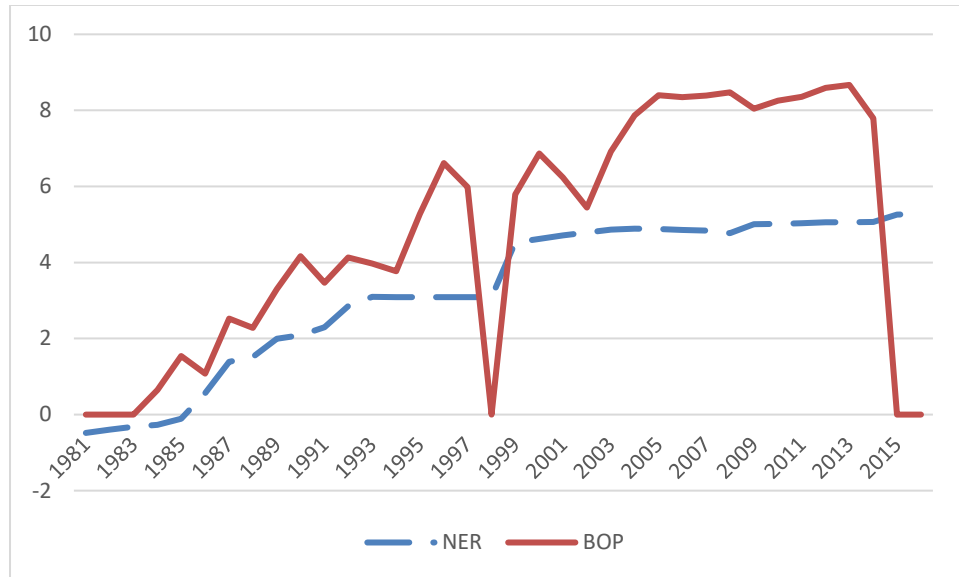
Fig. 1: BOP and Exchange Rate in Nigeria (1981-2016)

Source: Author Computation using Eviews 9

The above Fig. 1 depicts the trend of the relationship between BOP and exchange rate in Nigeria. Considering the trend for balance of payment in Nigeria, it is obvious that from the period 1981 up till 1993, there was a slow rise in the balance of payment in Nigeria. Between the periods 1994 and 1996, it witnessed a sharp increase of about 50 percent. However, in 1997, there was a sharp decline in Balance of payment of near 20 percent. Consequently, it witnessed a sharp rise from 1998 up till 2003. Thereafter, it experienced several fluctuations from 2004 up till 2014. Nevertheless, it witnessed a sharp decline between the periods 2015 and 2016.

On the other hand, between the periods 1981 up till 1993, exchange rate witnessed several fluctuations. However, in 1994, it experienced a slow increase of about 50 percent. Consequently, it witnessed a further increase of about 65 percent between the periods 1995 up till 2016. By way of comparison, it is obvious that both balance of payment and exchange rate witnessed several fluctuations. Also the findings show that balance of payment grows at a higher rate that exchange rate in the country. To further buttress the above trend analysis, let's look at Nigerian experienced on exchange rate volatility and balance of payment position.

Since the current civilian government abolished the fixed (nominal) exchange rate of the Abacha era, the premium between the parallel and the official rates fell sharply from 28.98 per cent to only 9.83 per cent. With the introduction of the DAS, the premium has further reduced to about 7.8 per cent. This is still high compared to the rates in many other developing countries where they are below 2 per cent. Hopefully, the DAS (if allowed to stay and work properly) could significantly reduce or eliminate the exchange rate premium. But the obsession with the stability of the nominal exchange rate by policymakers is a possible constraint in allowing the rate to find its true market value (CBN, 2008).

Based on the recent developments in exchange rate policy in Nigeria, the average rate of the naira to US appreciated with an average rate of #128 to a dollar at Dutch Auction System (DAS) in 2006. Exchange rate was generally stable from 2006 until December 2008. Stability and mild appreciation was sustained throughout 2007 and most of 2008 due to large foreign exchange inflows and deliberate policy not to allow rates to appreciate massively, thereby accumulating huge reserves. For the first time there was a convergence of rate among various segments of the foreign exchange market. The exchange rate regime will continue to be a key shock absorber for the economy to keep internal and external balance (CBN, 2008).

The balance of payments problem has become a binding constraint in the realization of the federal government of Nigeria macroeconomic objectives. Since the 80s, the nation's balance of payments position has been under constant pressure and this has been part of the major macroeconomic problem the nation has been dealing with. In the early 1980s, the oil market weakened, substantial external and fiscal imbalances emerged. These were financed by public sector borrowing, depleting international reserves and large accumulation on payment arrears on external trade credits and as such created problems in our Balance of payments. In 1984, austerity measures were introduced to redress the nagging deficits in the country's balance of payments, these included; slashing of budgetary expenditures, administrative control for import licenses, increase and upward review of tariffs. In 1986, the Structural Adjustment Programme (SAP) was introduced, which amongst other things, combined exchange rates and trade policy reforms to promote economic efficiency and long term growth in the stabilization polices designed to restore balance of payments equilibrium and price stability.

However, Nigeria has recorded well over fifteen deficits in her balance of payments account. These deficits were recorded in 1962, 1963, 1964, 1965, 1966, 1976, 1977, 1981, 1982, 1983, 1986, 1988, 1992, 1994, 1995, 1996, 1998, 1999, 2002, and 2003 (CBN 2010; 2011). The balance of payments problem has become a binding constraint in the realization of the federal government of Nigeria macroeconomic

objectives. Since the 80s, the nation's balance of payments position has been under constant pressure and this has been part of the major macroeconomic problem the nation has been dealing with.

Empirical Analyses

Summary Statistics of Variable

Table 1: Individual sample descriptive statistics

	BOP		NER	INFL	RIR	GEX
Mean	1306.176		74.85148	19.60313	0.105668	1525.342
Median	213.5080		57.20175	12.54680	3.227297	594.0800
Maximum	5822.589		195.3454	72.83550	25.28227	5185.320
Minimum	-2230.910		0.617708	5.382224	-43.57270	9.640000
Std. Dev.	2035.458		68.42504	17.69041	16.73098	1850.784
Skewness	0.856263		0.217345	1.664525	-0.937689	0.954671
Kurtosis	2.477466		1.403153	4.526572	3.720628	2.322942
Jarque-Bera	4.808684		4.108312	20.11948	6.054526	6.155987
Probability	0.090325		0.128201	0.000043	0.048448	0.046052
Sum	47022.33		2694.653	705.7129	3.804050	54912.31
Sum Sq. Dev.	1.45E+08		163869.5	10953.27	9797.400	1.20E+08
Observations	36		36	36	36	36

Table 1 presents the summary statistics of all the variables used for this study. The average value of balance of payment is 1306, nominal exchange rate is 74.85, inflation rate is 19.60, real interest rate is 0.10 and government expenditure is 1525.34. However, the maximum statistics of balance of payment has the highest value of 5822.59 while real interest rate has the lowest value of 25.28. In terms of the minimum, government expenditure has the highest minimum with 9.64 and at the same time BOP has the lowest minimum value of -2230.91. Also, balance of payment, nominal exchange rate, inflation rate, and government expenditure exhibit positive skewness while real interest rate are negatively skewed. This negative skewness implies that their median values are greater than their mean values and a left-sided divergence of the variables from their symmetry. All the variables except inflation rate and real interest rate

have kurtosis of less than equal 3 (kurtosis of a normal distribution) suggesting that the data set mirrors or have a lighter tail than a normal distribution. Hence, they have both mesokurtic and plytokurtic distribution. The Jarque-Berra statistics provides a measure of the test of normality. It shows that a null hypothesis of the data is not normally distributed, with the probability values less than 5 percent of all the variables except nominal exchange rate that is greater than 0.05 significance level. This indicates that all the variables except nominal exchange rate are normally distributed thus, we reject the null hypotheses while for nominal exchange, we fail to reject the null hypotheses for these variables for it dataset is not normally distributed.

Table 2: Augmented Dickey Fuller Test Result at Level and First Difference

VARIABLES	ADF TEST STATISTICS	ADF CRITICAL VALUE			ORDER OF INTEGRATION	REMARKS
		1% Level	5% level	10% level		
BOP	-1.339541	-3.646342	-2.954021	-2.615817	I(0)	NOT STATIONARY
NER	0.254695	-3.632900	-2.948404	-2.612874	I(0)	NOT STATIONARY
INFL	-3.402158	-3.639407	-2.951125	-2.614300	I(0)	NOT STATIONARY
RIR	-5.780434	-3.632900	-2.948404	-2.612874	I(0)	STATIONARY

GEX	1.568823	-3.632900	-2.948404	-2.612874	I(0)	NOT STATIONARY

VARIABLES	ADF TEST STATISTICS	ADF CRITICAL VALUE			ORDER OF INTEGRA TION	REMARKS
		1% Level	5% level	10% level		
D(BOP)	-5.946391	-3.646342	-2.954021	-2.615817	I(1)	STATIONARY
D(NER)	-5.742441	-3.639407	-2.951125	-2.614300	I(1)	STATIONARY
D(INFL)	-6.032602	-3.646342	-2.954021	-2.615817	I(1)	STATIONARY

D(RIR)	-7.264947	-3.646342	-2.954021	-2.615817	I(1)	STATIONARY
D(GEX)	-4.413387	-3.653730	-2.957110	-2.617434	I(1)	STATIONARY

Table 2 above shows the results of unit root test for ADF. it shows that in the process of comparing the test statistic value against the Mackinnon critical value at 1%, 5% and 10% level of significance, it was noticed that real interest rate was stationary at level while balance of payment, nominal exchange rate, and inflation rate were found to be stationary at first differenced. Hence, having tested for the stationarity of the variables, we proceed to test for the long run relationships of the variables which give us the co-integration result in Table 3 below.

Table 3: Unrestricted Cointegration Rank Test (Trace value)

Hypothesized No of CE(S)	Eigen Value	Trace statistic	0.05critical value	Prob**
None *	0.738684	118.0025	69.81889	0.0000
At most 1 *	0.617508	73.71564	47.85613	0.0000
At most 2 *	0.531611	42.00110	29.79707	0.0012
At most 3 *	0.327630	16.97204	15.49471	0.0298
At most 4 *	0.110733	3.872799	3.841466	0.0491

Trace value test indicates 5 co-integrating Eq(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Hypothesized No of CE(S)	Eigen Value	Max-Eigen statistic	0.05critical value	Prob**
None *	0.738684	44.28688	33.87687	0.0020
At most 1 *	0.617508	31.71454	27.58434	0.0139
At most 2 *	0.531611	25.02906	21.13162	0.0134
At most 3	0.327630	13.09924	14.26460	0.0758
At most 4 *	0.110733	3.872799	3.841466	0.0491

Max-eigenvalue test indicates 4 co-integrating Eq(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 3 above depicts the results of Johansen Cointegration test. It shows the estimated result of the long run relationship between the variables that is D(BOP), D(NER), D(INFL), D(RIR) and D(GEX) using the Johansen co-integration test. It was observed that the trace statistic in Table 2 indicated 5 co-integrating equations at the 5% level of significance. Similarly, the maximum Eigen value statistic also indicates 4 co-integrating equation at the 5% level of significance. These results suggest that there is co-integration or long–run relationship among the variables employed in this study. Thus, we further proceed to conduct an error correction test, given the one-year time lag used to show the speed of adjustment of the dependent variable to the changes in the explanatory variables in the short run and the result is presented in Table 4 below;

Table 4: Parsimonious Error Correction Result

Dependent Variable: BOP

Method: Least Squares

Date: 11/06/18   Time: 14:37

Sample (adjusted): 1987 2016

Included observations: 30 after adjustments

Convergence achieved after 25 iterations

MA Backcast: 1984 1986

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2872.555	13390.09	-0.214528	0.8321
D(NER)	-14.18340	9.720625	-2.459104	0.0587
D(INFL)	-18.92408	7.908522	-2.392872	0.0257
D(RIR)	6.472170	5.113689	1.265656	0.2189
D(GEX)	2.644794	0.427345	6.188901	0.0000
ECM(-1)	-0.564047	0.179627	-3.140100	0.0048
AR(4)	0.943113	0.295545	3.191096	0.0042
MA(3)	-0.858929	0.115666	-7.425922	0.0000

R-squared	0.887550	Mean dependent var		-21.58973
Adjusted R-squared	0.795862	S.D. dependent var		1299.580
S.E. of regression	922.7366	Akaike info criterion		16.71574
Sum squared resid	18731742	Schwarz criterion		17.08940
Log likelihood	-242.7361	Hannan-Quinn criter.		16.83528
F-statistic	5.074843	Durbin-Watson stat		1.942085
Prob(F-statistic)	0.001521			

Table 4 above depicts that the output of a parsimonious error correction model (ECM). It shows that about 56% of the discrepancy between the actual and the long run or equilibrium value balance of payment is corrected or eliminated each year. Notice that the coefficient of the ECM has a negative sign as expected and is significant at 1% probability level. The coefficient of determination (R^2) is 0.89 which shows that about 89 percent variations in the balance of payment were explained by the independent variables. Also, its

adjusted counterpart is 0.80 which shows that about 80 percent growth in balance of payment in Nigeria can be attributed to the explanatory variables.

The constant term is -2872.6 and this implies that D(BOP) decrease by about 2872.6 unit when other independent variables are assumed to be zero. The coefficient of nominal exchange rate is -14.18 and this implies that a unit increase in nominal exchange rate will result to about 14.18unit decrease in BOP in Nigeria. The coefficient of inflation rate is -18.92 and it shows that a unit increase in the D(INFL) will result to about 18.92 decrease in the D(BOP). The coefficient of real exchange rate is 6.47 and it shows that a unit increase in the D(RIR) will result to about 6.47 increase in the D(BOP). The coefficient of government expenditure is 2.64 and it shows that a unit increase in the D(GEX) will result to about 2.64 increases in the D(BOP). Similarly, the t-test for the intercept, D(NER), D(INFL), D(RIR) and D(GEX) were -0.21, -2.46, -2.39, 1.27 and 6.188 respectively. By implication, the t-test indicates that nominal exchange rate, inflation rate and government expenditure significantly influence BOP in Nigeria at 5 percent level of significance while real interest rate were found to be insignificant. Similarly, the F-test is 5.07 shows that the overall test is significant. Thus this tells us that the explanatory variables are simultaneously significant in forecasting small and medium scale output in Nigeria. Also, the Durbin-Watson statistics value of 1.94 indicates that there is no autocorrelation in the model.

Policy Implications of Findings

1. The findings show that nominal exchange rate negatively and significantly influenced balance of payment in the country. By implication, this implies that a rise in the exchange rate tends to result to deterioration in the balance of payment in Nigeria. The findings also show that nominal exchange rate plays a crucial role in the determination of balance of payment in Nigeria. To this end, the government should encourage export promotion strategies in order to maintain a surplus balance of trade which will help make the domestic currency strong and also prevent further depreciation of the Nigeria naira.

2. The findings also show that inflation rate is negatively and significantly related to balance of payment in Nigeria. By implication, this shows that inflation rate has a way of negatively influencing balance of payment in Nigeria. to this end, there is need for the government of the country to ensure stability in the general price level in the country as this will not only ensure stability of relative commodities prices in the country but will also ensure that the country achieve a balance of payment surplus.

3. The empirical result also how that real interest rate is positively related to balance of payment in Nigeria and its impact was found to be insignificant. By implication, this shows that an increase in the interest rate will result to improvement in the balance of payment position in the country. to this end, there is

need for the country to raise the interest rate as this will not only attract foreign investors in the country but will go a long to boost the domestic production of the country and as such result to improvement in the BOP position of the country.

4. The findings also show that government expenditure is positively and significantly related to balance of payment in Nigeria. By implication, this shows that the higher the government expenditure, the more the BOP of the country will be improved upon. The findings also show that international interest rate plays a crucial role in the determination of balance of payment in Nigeria.

Summary of Findings

The findings from the study are as follows:

1. Nominal exchange rate has negative and significant impact on balance of payment position in Nigeria.
2. Inflation rate has a negative and significant impact on balance of payment in Nigeria.
3. Real interest rate has a positive and insignificant impact on balance of payment in Nigeria.
4. Government expenditure has a positive and significant impact on balance of payment in Nigeria.

Conclusion

This study examined empirically the impact of exchange rate volatility on balance of payment in Nigeria using data spanning between the periods 1981 to 2016, by employing the use of Augmented Dickey Fuller test, Cointegration test and Error Correction technique. From the study, the findings revealed that nominal exchange rate, inflation rate and real interest rate has a negative relationship with balance of payment in the country while government expenditure was found to be positively related to balance of payment in the country. Similarly, the findings also revealed that nominal exchange rate, inflation rate and government expenditure were found to be significant while real interest rate were found to be insignificant.

On the whole, there is need to discourage over-reliance on imported goods and the promotion of domestic export produce is very imperative. This can only be achieved if the Nigerian economy is diversified and entrepreneurial development promoted in the country. In addition, the government should encourage export promotion strategies in order to maintain a surplus balance of trade which will help make the domestic currency strong and also prevent further depreciation of the Nigeria naira.

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