

## Macroeconomic forces and Balance of Payment in Nigeria: The Triple Helix of Elasticity-Absorption- Monetary Approaches

### Abstract

*The study examines the effect macroeconomic forces on balance of payment. Ex post-facto research was adopted and the sample of the study covers the period of thirty-one years spanning from 1986 to 2016. Secondary source of data was used and obtained from Central Bank of Nigeria Statistical Bulletin. The data were analysed through Toda-Yamamoto causality test. The study reveals mixed relationship between exchange rate, inflation rate, money supply and interest rate. Conclusively, there is no relationship among the inflation rate, exchange rate and money supply but however, weak relationship exists between the exchange rate and interest rate. In view of this, the study concluded that monetary policy made by Central Bank of Nigeria should not be tailored only to money supply but also ensuring higher output and employment among others in the country.*

**Keywords: Macroeconomic forces, Balance of Payment, Elasticity Approach, Absorption Approach, Monetary Approach**

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### 1.0 Introduction

Expenditure-switching policy stressed that domestic expenditure should be reduced on consumption and investment and this will release goods for export, while leaving aggregate output unchanged. This corroborates with the assertion of Komolafe, (1996) who posit that the aim of expenditure switching policy is about switching domestic demand from imported to home made goods. The extent to which the switching is achieved depends on elasticity of supply and demand for tradable goods. However, expenditure- switching policies have costs in terms of loss of output, investment and employment. The loss would be minimized if resource can be easily moved to the tradable goods sector or bridging external loans may be contracted to sustain an acceptable level of investment and output. In spite of this, the need to maintain balance of imports and exports of goods is not only of comparative advantage of international trade but also reveal performance of a country in an international economic competition. The effect of decrease and increase in balance of trade is observed in determination of balance of payments of a country because it is a developed tool that is used for the accounting of any country's total payments made during a specific period and the total receipts collected from foreign economies that result from engagement with foreign governments or foreign private sectors through trade (International Monetary Fund, 2009). However, evidence from literature shows that since the 50s and 60s of the last century there has been a consensus on three fundamental approaches in the analysis of the balance of payment known as elasticity, absorption, and monetary approaches. The common characteristic of these three approaches is that in their equations these approaches take into account mainly the local variables thus observing the impact of their change under the operation of the measures of national economic policies targeting the equilibrium of the balance of payments of the country.

Elasticity approach shows how the change in the value of the currency affects the balance of payments. Hence, changes in the exchange rate of the local currency vis-à-vis the currency in which the external trade takes place results in different balances of the current account within

50 the balance of payments. In this context, Marshall-Lerner condition states that the currency  
51 devaluation will eventually improve the balance of payments and in order to achieve this,  
52 amount of elasticity of the demand for imports and exports should increase. When the  
53 country devalues its currency, the price of exports will decline and theoretically it will  
54 increase demand for these exports. However, in order to come to the increased demand, the  
55 exported products must be products with elasticity. The absorption approach assumes that the  
56 basic income and expenses change and that this change affects the performance of the  
57 balance of payments. So the absorption approach ignores the effect of the change in the  
58 exchange rate, which as noted earlier is a feature of the elasticity approach. Consequently,  
59 this approach advocates for running an active policy in managing the domestic demand so it  
60 can help reduction of current account deficit of the balance of payments - because as it is  
61 known with a slowdown in domestic demand compare to the domestic supply, which can  
62 reduce the current account deficit. Surplus in the current account when the country consumes  
63 less than it produces and the opposite in the case of the deficit - which the country spends  
64 more than it produces. The state of the current account deficit poses a serious problem for  
65 policymakers and this deficit can be reduced either by increasing GDP and / or by reducing  
66 domestic demand.

67 The monetary approach puts at centre monetary terms, namely it treats the balance of  
68 payments as a monetary phenomenon and therefore calls for analysis of the balance of  
69 payments by using monetary theory. In general, although the real factors are not entirely  
70 excluded, this approach mainly focuses on the relationship between supply and demand for  
71 money as the main basis for analyzing the balance of payments. Based on this, the main  
72 thrust of this research is to examine the relationship between the elasticity-absorption-  
73 monetary approaches and their effect on balance of payment. The fundamental questions in  
74 this study are does relationship exist between exchange rate, inflation rate, money supply and  
75 interest rate? What effect does this relationship has on balance of payment? To answer this  
76 questions the remaining part is structured as follow: section two reviews literature and theory  
77 that underpin the study, section three outlines the methodology and model specification  
78 adopted for the study. Data analysis and discussion were presented in section four while  
79 section five concludes the paper and proffer recommendations.

80

## 81 **2.0 Empirical Review and Theory**

82 Mungami (2012) examined effects of exchange rate liberalization on balance of payments of  
83 a developing country using a case of Kenya. The study found that exchange rate liberalization  
84 had improved the overall balance of payment but it had not improved the current account or  
85 reduced the balance of trade deficit. The study concluded that exchange rate liberalization  
86 had a negative effect on the companies export sales due to wide fluctuations that made  
87 planning hard and losses were incurred because of fluctuation. In the same token, Ambunya  
88 (2012) examined the relationship between exchange rate movement and stock market returns  
89 volatility at the Nairobi securities exchange. The study found that there is a strong  
90 relationship between exchange rate movement and stock market returns volatility. The study  
91 concluded that the exchange rate volatility also affected market performance greatly through  
92 its spiral effects. In a similar study, Mambo (2012) did an analysis of the relevance of the  
93 monetary approach to Kenya's balance of payments for the period (1969-2002).The study  
94 examined the relevance of the monetary approach to the Kenya balance of payments using  
95 annual data. The study found that balance of payment is a significantly affected by its own  
96 second and third lags, the first lag and second lag of exchange rate and the first lag of prices.  
97 The study concluded that domestic credit and interest rate were the two important variables  
98 affecting Kenya's balance of payments. Osoro (2012) did an investigation on major  
99 determinants of trade balance in Kenya using annual data for 1963-2012. The findings

100 indicated that the coefficients of trade balance are positively correlated with budget deficits,  
101 FDI and exchange rates. The result showed that FDI has a positive effect on trade balance  
102 because the trade balance in Kenya is negative. The study concluded on the basis of  
103 Marshall-Lerner condition through VECM, indicating that depreciation improves the trade  
104 balance.

105

106 Iyoboyia and Olarinde (2013) investigated the impact of exchange rate depreciation on the  
107 balance of payments (BOP) in Nigeria over the period 1961–2012. The study found a long-  
108 term equilibrium relationship between BOP, exchange rate and other associated variables.  
109 The empirical results are in favour of bidirectional causality between BOP and other  
110 variables employed. The study concluded that exchange rate depreciation which has been  
111 more important in Nigeria since the mid-1980s was not very useful in promoting the  
112 country's positive balance of payment. Were, Nyamongo, Kamau, Sichei, and Wambua  
113 (2014) analyzed monetary policy reaction function for Kenya using quarterly data for the  
114 period 1999 to 2011. The study revealed a strong effect of interest rates smoothing and  
115 supports the fact that monetary policy was accommodative of the output growth objective.  
116 The study concluded that evidence supported forward-looking monetary policy, which is  
117 critical in view of the increasing role of expectations in modern monetary policy-making  
118 process. Gureech, (2014) assessed the determinants of balance of payment performance in  
119 Kenya using time-series data for period the 1975 – 2012. The study found a positive  
120 relationship between current balance of payment and previous balance of payment at first,  
121 second, and third lag, differenced money supply at fourth lag, differenced exchange rate,  
122 terms of trade at second lag, differenced openness of economy at third and fourth lags, real  
123 interest rate at second and fourth lags and gross capital formation at fourth lag. The study  
124 recommended that the Government of Kenya, Central Bank of Kenya, all financial  
125 institutions and other stakeholders whose activities influence money supply, terms of trade,  
126 openness of economy, real interest rate, gross capital formation, and political instability ought  
127 to apply relevant policy measures for better management of Kenya's balance of payment.

128

129 Imoughele, and Ismaila (2015) examined the monetary policy phenomenon to Balance of  
130 Payment (BOP) in Nigeria. The study found that monetary policy variables of Exchange rate,  
131 Broad money supply and credit to the private sectors are the major monetary factors that  
132 determine BOP in Nigeria. The study concluded that monetary policies and implementation  
133 capacity is important in the Nigerian economy, because it is very special for determining the  
134 provision of interest rate to private sector which produce for export which will have a spill  
135 over effect on BOP and economic growth. Ismaili-Muharremi, (2015) investigated the  
136 difficulties and challenges of the selected Western Balkan countries that all seems to have  
137 serious problems with regard to the sustainability of their current account. The study is a  
138 conceptual research and found that domestic production and increased volume of exports  
139 accompanied by stable flow of FDIs are the key elements of the framework for improving the  
140 current account of the balance of payments in this part of the world. In a recent study,  
141 Mbanasor, and Obioma, (2017) conducted a study on the effect of fluctuations of exchange  
142 rates on Nigeria's balance of payment is the focus of this research. The study found that  
143 exchange rate fluctuations have positive and non-significant impact on Nigeria's balance of  
144 payment. The study concludes that the dominance of the oil sector in Nigeria has left the  
145 balance of payment vulnerable when there are sharp changes in the rate of foreign exchange  
146 and since much has not been done over the years enlist other sectors of the economy the  
147 problem persists. This study recommends that monetary policy authorities should ensure a  
148 consistent exchange rate policy which domesticates the peculiarities of the Nigerian economy  
149 to ensure a favourable balance of payment position for Nigeria.

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151 From the study reviewed, it was found that there are scanty of literature on the effect of  
 152 macroeconomic forces on balance of payment and this justifies the importance of conducting  
 153 this research. Thus, the study adopts elasticity, absorption and monetary approaches to  
 154 underpin the study.

155

156 **3.0 Methodology**

157 Ex post-factor is employed in the study and time series data were collected over a successive  
 158 point in for time thirty-one years which spans from 1986 to 2016 from Central Bank of  
 159 Nigeria statistical bulletin. The vector autoregression (VAR) is an econometric model used  
 160 to capture the linear interdependencies among multiple time series is employed in this study.  
 161 This is because VAR models generalize the univariate autoregressive model by allowing for  
 162 more than one evolving variable. All variables in a VAR are treated symmetrically in a  
 163 structural sense; each variable has an equation explaining its evolution based on its own lags  
 164 of the other model variables (Banerjee, Juan, Galbraith, & David, 1993). Therefore, VAR  
 165 parameterization takes the following form.

$$y_t = \alpha + \sum_{i=1}^p \beta_i y_{t-i} + \epsilon_t \tag{3.1}$$

166 By expansion equation 1 becomes:

$$y_t = \alpha + \beta_1 y_{t-1} + \dots + \beta_p y_{t-p} + \epsilon_t \tag{3.2}$$

169 Where the error term  $\epsilon_t$  follows a multivariate Gaussian distribution with zero mean and  
 170 constant variance. That is:

$$\epsilon_t = WN(0, \Omega) \tag{3.3}$$

172 The study adopted Toda and Yamamoto VAR in order to avoid integration complexity  
 173 among variable that is it can be used at any order of integration, level, first difference or  
 174 second difference and improve the power of granger-causality test. It has the advantage of  
 175 making parameter estimation valid even when the VAR system is not co-integrated.  
 176 However, before estimating the model there is need to conduct pre-estimation test such as lag  
 177 selection criterion to determine the optimum lag based on the information criterion, unit root  
 178 tests correlation matrix among others, then the estimation of the Toda and Yamamoto VAR  
 179 and the post-estimation test.

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181 **4.0 Result and Discussion**

182 This section presents the analysis of the data and the discussion of the findings. The analysis  
 183 is carried out on the basis of pre-estimation, estimation and post estimation.

184

185 **4.1 Pre-Estimation Test**

186 The method adopted to describe the data employed in this study is the statistical. This is  
 187 based on statistics such as mean, maximum, minimum, standard deviation, skewness,  
 188 kurtosis, and Jarque-Bera statistics. Table 4.1 gives the results of the statistical method.

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**Table 4.1-Statistical Description of Data**

	MS	BOP	EXC	INF	INT
Mean	4145.943	-12136.11	124.9245	19.24210	18.60338
Median	878.4573	-53.15200	91.50000	12.19500	17.98000
Maximum	18901.30	4698.047	490.4100	72.72900	29.80000
Minimum	22.29924	-179648.0	49.73000	3.226000	9.250000
Std. Dev.	5900.166	37013.72	90.85436	18.05661	4.183256
Skewness	1.315530	-3.599437	2.473603	1.643526	0.461365

Kurtosis	3.299203	15.64250	9.651419	4.511769	4.163947
Jarque-Bera	9.057166	273.3897	88.75846	16.90812	2.849680
Probability	0.010796	0.000000	0.000000	0.000213	0.240547

190 **Source: Output from the E-view (2018)**

191 Table 4.1 shows the summarized descriptive statistics computed on the series of money  
 192 supply, balance of payment, exchange rate, inflation rate and interest rate. It is remarkable  
 193 that both the median and average values are positive except in balance of payment. It was  
 194 also observed that there is a significant margin between the median and mean. This implies  
 195 that these variables displayed an increasing tendency through the period of investigation.  
 196 Thus, there is statistical evidence that since the period of 31 years money supply, exchange  
 197 rate, inflation rate and interest rate have been increasing. Although, the result show that there  
 198 is decrease in balance of payment as indicated by the negative minimum value, mean value  
 199 and median value. Looking at the range of these variables, money supply has the largest  
 200 range from 18901.30 to 22.29924, followed by balance of payment with the range from  
 201 4698.047 to -179648.0. These ranges associate with standard deviations 5900.166 and  
 202 37013.72 respectively. These appear to be the largest standard deviations observed among the  
 203 variables. Thus, balance of payment and money supply are the most volatile variables.

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205 In a different token, interest rate has the lowest range and volatility. The scale of skewness  
 206 with respect to balance of payment is -3.599437 and this implies that the variable is  
 207 negatively skewed and as such, it exhibits large value over a long portion of the sampling  
 208 period. On the contrary, money supply, exchange rate, inflation rate and interest rate are  
 209 positively skewed and have large values over a short period. The values of kurtosis for all the  
 210 variables are larger than 3 and this shows that they are leptokurtic, and therefore, they have  
 211 tin tail in their distribution pattern, suggesting that there are presence of outliers or large  
 212 values in the expected future date. Finally, the probability values corresponded to Jarque-  
 213 Bera statistics with respect to money supply, balance of payment, exchange rate, and inflation  
 214 rate are less than 5 percent, meaning that the distribution pattern of these variables is not  
 215 normal. However, the probability value in respect to interest rate is larger than 5 percent. This  
 216 implies that the variables are normally distributed.

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218 Summarily, the statistical description of the data is not enough to conclude that the data is fit  
 219 for analysis. Thus, to confirm the possibility of fitting the data into regression equations for  
 220 estimation purpose the researcher conducts pre-estimation test such as optimum lag criterion,  
 221 unit root test using Augmented Dickey-Fuller (ADF) method and correlation analysis for  
 222 perfect collinearity test. In actual sense, test for lag selection precedes the unit root test. The  
 223 maximum lag selection test based on all information criteria for the specified variables is  
 224 conducted and the results are depicted in table 4.2 below.

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226

**Table 4.2 Optimum Lag Selection for the Specified Variables**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-970.8146	NA	1.16e+23	67.29756	67.53330	67.37139
1	-866.2151	165.9164	4.94e+20	61.80794	63.22238*	62.25092
2	-832.9294	41.32015*	3.30e+20*	61.23651*	63.82966	62.04865*

227

*Note that: \* indicates lag order selected by the criterion, LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion and HQ: Hannan-Quinn information criterion.*

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**Source: Output from the E-view (2018)**

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The optimum lag is given by the smallest value of the information criteria. In the table above  
 231 all the information criteria- FPE, AIC, SC and HQ have the smaller value at lag 2; implying

232 that 2 is the optimum lag selected by these information criteria. Thus, the AR framework that  
 233 gives rise to unit root test and Toda and Yamamoto VAR approach are operationalized using  
 234 lag 2 as the optimal lag. Table 4.3 provides the summarized results of the unit root test, while  
 235 tables 4.4 display the correlation matrix for multicollinearity test.

237 **Table 4.3-ADF Unit Root Test wrt BOP, EXC, INF, INT and MS**

Variable	ADF-Stat	5% CV	P-Value	Order Int.
239 BOP	-4.515824	-2.963972	0.0012	I(0)
240 EXC	-5.823590	-2.963972	0.0000	I(0)
241 INF	-4.929199	-2.967767	0.0004	I(1)
242 INT	-4.094458	-2.963972	0.0035	I(0)
243 MS	-3.333427	-2.967767	0.0224	I(2)

244 **Source: Output from the E-view (2018)**

245 The ADF unit root test is conducted to verify the order of integration of each variable. The  
 246 outputs of the test are the ADF statistics, the 5 percent critical values and probability value,  
 247 which are presented in table 4.3. The null hypothesis here is that the series is not stationary or  
 248 the series has a unit root. The result shows that that all the variables were not stationary at  
 249 level but also at first and secondary differences, indicating that these variables are multi-  
 250 leveled integrated. However, in order to estimate the long-run relationship among the  
 251 variables the Today-Yamamoto vector autoregressive will be used. Thus, the result of  
 252 correlation is reported below;

253 **Table 4.4-Correlation Test wrt BOP, EXC, INF, INT and MS**

	BOP	EXC	INF	INT	MS
BOP	1	-0.1550	0.0885	0.1694	0.2383
EXC	-0.1550	1	-0.2141	-0.6075	-0.0418
INF	0.0885	-0.2141	1	0.4290	-0.3368
INT	0.1694	-0.6075	0.4290	1	-0.2388
MS	0.2383	-0.0418	-0.3368	-0.2388	1

254 **Source: Output from the E-view (2018)**

255 Table 4.3 reports the correlation coefficients used to study the extent of association among  
 256 the variables for the period thirty-one years. The interpretation of the Pearson correlation  
 257 would follow Guilford rule of thumb which is < 0.2 is a negligible correlation, 0.2 to 0.4 is  
 258 low correlation, 0.4 to 0.7 is a moderate correlation, 0.7 to 0.9 is a high correlation, > 0.9 is a  
 259 very high correlation. The result shows that the correlation between the independent variables  
 260 and dependent variable used in the model is generally weak. The largest correlation  
 261 coefficients exist between the exchange rate and interest rate (60.75%). Also, the correlation  
 262 matrices does not reveals that two explanatory variable are perfectly correlated. This means  
 263 there is absence of multicollinearity problem among the variables. Fulfilling this condition  
 264 coupled with the fact that the variables are multileveled stationary. Other pre-requirements  
 265 for the Toda and Yamamoto VAR are that the VAR process must be ergodic (stationary) and  
 266 the error term must be IID compliant. The test for ergodicity and LM serial correlation are  
 267 carried out and reported in table 4.5 below;

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 271  
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**Table 4.5 Showing LM Serial Correlation Test**

Lags	LM-Stat	Prob
1	16.37206	0.3058
2	18.20055	0.4442
3	20.54292	0.2256

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**Source: Output from the E-view (2018)**

278

The study examined the LM statistics up to lag 3 and the statistics appear to be very small;

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while the corresponding p-values are respectively larger 5 percent. In view of this, the null

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hypothesis of no serial correlation cannot be rejected. The residuals are independently spread.

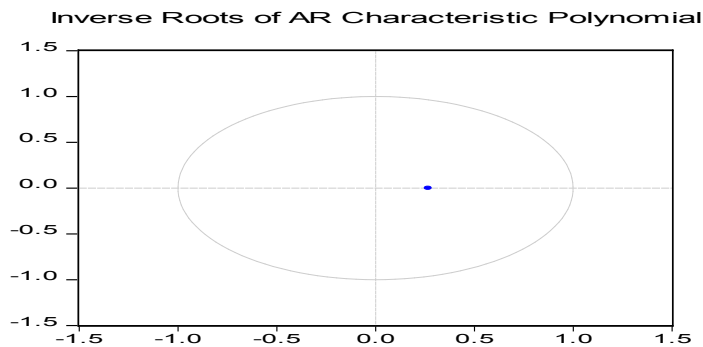
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The test for ergodicity is carried out by computing the root of the AR polynomial and it is

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shown in the figure below.

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*Figure 4.1 Stability of Balance of payment-macroeconomic forces VAR Process*

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**4.2 Estimation Test**

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This section documents long-run relationship between the balance of payment and exchange

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rate.

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290

**Table 4.6-Nature of the Long Run Relationship between BOP, EXC, INF, INT and MS**

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Variables	Coefficients	Std.Error	T-statistics
EXC(-1)	328.8089	(121.946)	[ 2.69635]
INF(-1)	2627.977	(305.230)	[ 8.60982]
INT(-1)	-6891.437	(1187.52)	[-5.80322]
MS(-1)	-18.08256	(4.49397)	[-4.02374]

292

**Source: Output from the E-view (2018)**

293

The long run coefficients with respect to exchange rate, inflation rate, interest rate and money

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supply are 328.8089, 2627.977, -6891.437 and -18.08256 respectively and their associated t-

295

values are 2.69635, 8.60982, -5.80322 and -4.02374. This implies that in the long run

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exchange rate and inflation rate will significantly increase with an increase in the balance of

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payment while interest rate and money supply will significantly decrease with an increase in

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the balance of payment. Thus, exchange rate and inflation rate have positive and significant

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effect on balance of payment while interest rate and money supply have negative but

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significant effect on balance of payment. The researcher equally examine cause and effect;

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between each pair of the variables using the Granger causality technique. The results are

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shown in table 4.7 below;

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306 **Table 4.7 Granger Causality between Pair of BOP, EXC, INF, INT and MS**

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Equation/Excluded	Chi2	Df	Prob.
<b>BOP</b>			
EXC	23.00231	2	0.0000
INF	74.32527	2	0.0000
INT	48.42528	2	0.0000
MS	29.20201	2	0.0000
ALL	23.77173	8	0.0000
<b>EXC</b>			
BOP	10.20283	2	0.0061
INF	5.536933	2	0.0628
INT	1.932215	2	0.3806
MS	0.769732	2	0.6805
ALL	23.77173	8	0.0025
<b>INF</b>			
BOP	1.140298	2	0.5654
EXC	0.809292	2	0.6672
INT	3.287370	2	0.1933
MS	2.571267	2	0.2765
All	15.71572	8	0.0466
<b>INT</b>			
BOP	28.23277	2	0.0000
EXC	9.686730	2	0.0079
INF	4.884183	2	0.0870
MS	3.655805	2	0.1608
All	64.52731	8	0.0000
<b>MS</b>			
BOP	0.327715	2	0.8489
EXC	2.700630	2	0.2592
INF	1.463007	2	0.4812
INT	4.911477	2	0.0858
All	10.12276	8	0.2565

308

309 **Source: Output from the E-view (2018)**

310 In the first compartment, all p-values are significant this implies that the null hypothesis that  
311 the excluded variable does Granger cause equation variable is rejected at 95 percent  
312 confidence. The explanation for this is that implies that balance of payment can be used to  
313 explain the future behaviour exchange rate, inflation rate, interest rate and money supply.  
314 Also, exchange rate appears to be a useful tool for predicting balance of payment in the  
315 second compartment of the result since the p-value is significant at 5% but cannot be used to  
316 predict the future behavior of inflation rate, interest rate, and money supply. In the third  
317 compartment, all p-values are not significant and this implies that inflation rate cannot be  
318 used to predict balance of payment, interest rate, exchange rate and money supply in the  
319 future. The result in the fourth compartment reveals that interest rate can only predict the  
320 future behavior of balance of payment and exchange rate but cannot be used to predict  
321 inflation rate and money supply. The fifth compartment shows that money supply cannot be  
322 used to predict balance of payment, exchange rate, inflation rate and interest rate in the future  
323 since none of the p-values is significant at 5%.

324

325 **4.3 Post Estimation Test**

326 This section confirms the validity of the model. The result is presented in the table 4.8 below;



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**Table 4.8 Diagnostic Test of the ARDL Specification**

Root	Modulus
0.089104 - 0.633288i	0.259842
0.089104 + 0.633288i	0.259842
0.576031 - 0.821460i	0.703298
0.576031 + 0.821460i	0.803298
-0.795977 - 0.213358i	0.824076
-0.795977 + 0.213358i	0.824076
0.014801 - 0.348282i	0.348597
0.014801 + 0.348282i	0.348597
0.005133 - 0.082247i	0.082407
0.005133 + 0.082247i	0.082407

328 **Source: Output from the E-view (2018)**329 From the result, it reveals that the model is stable since none of the modulus value is greater  
330 than one. This implies that meaningful generalization can be drawn it.

331

332 **4.4 Discussion of Result**

333 The study found that exchange rate and inflation rate have positive and significant effect on  
334 balance of payment while interest rate and money supply have negative but significant effect  
335 on balance of payment. The positive effect of exchange rate support Marshall-Lerner  
336 condition which states that the currency devaluation as a result increase in the exchange rate  
337 will eventually improve the balance of payments because the price of exports will decline and  
338 this will increase demand for these exports. This conforms to the finding of Osoro (2012).  
339 Also, positive effect of inflation rate on balance of payment was revealed and this supports  
340 the Purchasing Power Parity theory which stressed that when the price of a good differs  
341 between two countries' markets because of high inflation, it creates an incentive for profit-  
342 seeking individuals to import the good in the low price market and resell it in the high price  
343 market. This conforms to the finding of Gureech, (2014). The negative effect of interest rate and  
344 money supply on balance of payment does not concurs with the monetary approach to balance of  
345 payment that puts emphasis that a country balance of payment is essentially a monetary  
346 phenomenon and any observed disequilibrium in the balance of payments can be eliminated  
347 through manipulation of monetary variables especially interest rates and money supply. This does  
348 not conform to the finding of Gureech, (2014). More so, exchange rate cannot be used to predict  
349 the future behaviour of inflation rate, interest rate, and money supply. Inflation rate cannot be  
350 used to predict interest rate, exchange rate and money supply in the future. Interest rate can  
351 predict exchange rate but cannot be used to predict inflation rate and money supply. Money  
352 supply cannot be used to predict exchange rate, inflation rate and interest rate in the future.  
353 This contradicts the submission of Rabin and Yeager (1982) who found that monetary  
354 approach is compatible with the elasticity and absorption approaches to balance-of-payments  
355 analysis. The explanation for this is that the monetary expansion as a result from exchange-  
356 rate pegging produces an excess supply of money and inflationary pressure.

357

358 **5.0 Conclusion and Recommendation**

359 From the findings, the study reveals mixed relationship between exchange rate, inflation rate,  
360 money supply and interest rate. Conclusively, there is no relationship among the inflation  
361 rate, exchange rate and money supply but however, weak relationship exists between the

362 exchange rate and interest rate. In view of this, the study concluded that monetary policy  
 363 made by Central Bank of Nigeria should not be tailored only to money supply but also  
 364 ensuring higher output and employment among others in the country. The study is limited to  
 365 Nigeria, thus other studies can expand the scope and focus on more countries in Africa in  
 366 order to contribute to literature in this area.

### 367 **References**

- 368 Banerjee, A., Juan D., Galbraith, J., & David, F., H., (1993). *Cointegration, Error Correction,*  
 369 *and the Econometric Analysis of Non-Stationary Data.* Oxford. Oxford University  
 370 Press.
- 371 Gureech, M., A., (2014). *The Determinants of Balance Of Payments Performance in*  
 372 *Kenya.* Research Project Submitted in Partial Fulfilment of the Requirements  
 373 for the Award of the Degree of Master of Arts in Economic Policy  
 374 Management of the University of Nairobi, Kenya
- 375 Imoughele, L., E., and Ismaila, M., (2015) Monetary Policy and Balance of Payments  
 376 Stability in Nigeria. *International Journal of Academic Research in Public Policy &*  
 377 *Governance, 2,(1)*
- 378 Ismaili-Muharremi, T., (2015) Factors Affecting Current Account in the Balance of Payments  
 379 of Selected Western Balkan Countries, *Journal of Accounting and Management, 5(3).*ent
- 380 Iyoboyi, M. &Olarinde, M. (2013). Impact of exchange rate depreciation on the balance of  
 381 payments: Empirical evidence from Nigeria, *Cogent Economics & Finance, 5,* 15-24
- 382 Mbanasor, C., O. &Obioma, J. (2017). The Effect of Fluctuations of Exchange Rates on  
 383 Nigeria's Balance of Payment. *International Journal of Banking & Finance Research,*  
 384 *3(2).* IIARD – International Institute
- 385 Mungami, S. E. (2012). The effects of exchange rate liberalization on the balance of Payment  
 386 of a developing country: a case of Kenya, *Unpublished MBA Thesis, Kenyatta*  
 387 *University.*
- 388 Osoro, K. (2013). Kenya's Foreign Trade balance: An empirical investigation, *European*  
 389 *Scientific Journal, 9(19),* 1857 – 7881.
- 390 Rabin A. A. and Yeager, L. B. (1982) Monetary approaches to the balance of payments and  
 391 exchange rates, *Essays in International Finance,* No. 148,
- 392 Were, M., Nyamongo, E. M., Kamau, A.W., Sichei, M. &Wambua, J. (2014). Assessing the  
 393 effectiveness of monetary policy in Kenya: Evidence from a macroeconomic  
 394 model. *Economic Modelling, 37,* 193-201 .