Impact of Fiscal Policy on Balance of Payments in Nigeria

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Abstract
This study investigates the impact of fiscal policy on balance of payments adjustment in Nigeria within the periods, 1981-2015. Using the bound testing approach, the study established the relationship that exists among fiscal policy instruments (tax and government expenditure), investment, output and balance of payments adjustment in Nigeria. The result revealed that in the long-run, government spending, investment and outputs have positive impact on balance of payments adjustment in Nigeria. However, tax revenue had negative impact on balance of payments in Nigeria. The high deficit finance by the Nigerian government where government spending is greater than tax revenue in most of the years considered had sustained the current account surplus in the country. Therefore, expansionary policies on fiscal policy measures should be encouraged as they play vital role for the enhancement of balance of payments in Nigeria.

Keywords
Tax, government spending, investment, income, current account balance

Introduction
One of the major economic or demand management policies that every economy uses is the fiscal policy to maintain a healthy balance of payments so as to safeguard the external value of national currency. It is also used to reduce variations in aggregate spending which are important causes of fluctuations in economic activity. It is considered as an expansionary policy if government expenditures are increased and/or taxes reduced and a contractionary if government expenditures reduced and/or taxes increased.

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The importance of the external sector lies in the fact that every nation engages in trade and payments while the external sector measures the performance of an economy with the rest of the world. In the light of this, the International Monetary Fund (IMF) gives both financial assistance and policy advice to countries that have experienced chronic balance of payments problem. The record of the monetary value of this trade between a country and the rest of the world is termed balance of payments (Gbosi, 2007). Thus, balance of payments is an accounting statement that summarises the economic transactions between residents of the home Country and residents of all other countries.

In Nigeria, the government has adopted series of contractionary and expansionary fiscal policies corresponding to the underlying macroeconomic problems and the need to accelerate economic activities. Fiscal policy was expansionary during the period 1975-1980, and contractionary between 1986 and 1990. The past five years saw a resumption of fiscal expansion; government spending increased by an average of 18 per cent annually. That is the period when the share of capital spending regained a significant portion of 27 percent, as large as its share in the early 1970s. The early 1990s witnessed a new turn in the budget allocation. For instance, in the 1995 budget, education expenditure was larger than the defence budget. Part of the reason was the recognition that human capital development had to be given top priority in the national economic development plan. Also, the government adopted a more expansionary fiscal policy to stimulate economic activities in the wake of Structural Adjustment Programme (SAP) era between 1985 and 1994 (Imoisi, 2013).

An examination of the Nigeria’s profile on current account balance shows that the country recorded deficit for 12 years from 1981 to 2015 (CBN, 2016). The continual imbalances in the external sector of the economy seemingly suggest that government needs to do more in order to stimulate economic growth and development. Thus, this paper investigates the extent at which fiscal policy measures have influenced the BOP position in Nigeria within the periods of 1981–2015. The rest of this paper is divided into four sections. Section II contains the review of literature while section III is on modeling of fiscal policy and balance of payments. Data analysis and discussion form the content of section IV and section V is the summary and conclusion.

Review of Literature

There are various theories explaining the effectiveness of fiscal policy on the economy. The Mundel-Fleming model put forward by Fleming (1962) and Mundel (1963) argued that financial wealth of an economy improves owing to an increase in government deficit that gives rise to consumer spending as it increases disposable income. An increase in imported products depreciate exchange rate while the depreciation of exchange rate increase exports. Thus, the effect of budget deficit on trade balance is ambiguous as both import and
export increase. However, the absorption theory postulated by Keynes (1934) negates the inconclusive effect in the Mundel-Fleming theory. The theory argued that an increase in budget deficit increases domestic absorption and import increases. This makes current account to move towards deficit from its initial equilibrium position. In addition, the Ricardian equivalence theory postulates that adjustments in taxes and budget deficits have no effect on real interest rate, investment and hence the current account. Consequently, there is no link between budget deficit and external sector performance because consumers are forward looking. Consumers save any increase in expenditure made by the government so that they pay their expected future taxes when government eventually taxes them. It implies that deficit and taxes are equivalent in their effect on consumption, investment and hence current account. The Ricardian equivalence concludes that fiscal deficit has no effect on the external sector.

Quite a number of studies have been carried out in this regard. For instance, Bakarr (2014) examines the short run and long run relationships between budget and current account deficit in Sierra Leone within the framework of the bounds test approach and the Toda Yamamota 1995 causality analysis between 1980 and 2012. The study revealed that budget deficit, real GDP and political instability have positive impact on current account deficit in the long run. Also, the study revealed that budget deficit and political instability were the most significant variables influencing current account deficit in Sierra Leone during the period reviewed.

Hashemzad and Wilson (2006) investigate the dynamics of current account and budget deficit balance in selected countries of the Middle East and North Africa. The results of the Causality test and Vector Auto Regression (VAR) Impulse Response Function and Variance Decomposition techniques showed that deficit financing tends to simulate the flow of imports in an expanding economy and it may pose a serious problem when the economy is in recession. The study revealed that the relationship between the two deficits is subject to change on the tax system, trade patterns, exchange rate and internal and external forces that affects the economic status of an economy. Ocampo (2011) investigates the linkage between budget deficit and current account in Latin America and Caribbean and found that the degree of openness is a significant determinant of deficits in those countries.

Time series studies such as Mansur (1989) examined the effects of budget deficits on the current account balance of Philippine. The results of the structural simulation model showed that enlarged budget deficits resulting from increasing government expenditure financed by bank credit and external borrowing led to deterioration of the current account. Ahluwalia (1986) examined balance of payments adjustment in India between the period 1970 and 1984 using simulation model. The results show that India’s growth performance was severely constrained by external environment. Korsu (2012)
examined the effects of fiscal deficit on the external sector of Sierra Leone utilizing aggregate data from 1971 to 2005. Equations for money supply, price level, real exchange rate and the overall balance of payments were estimated simultaneously, using Three Stage Least Squares (3SLS) method. The result shows that fiscal restraint improves the external sector of Sierra Leone by reducing money supply and the price level. Also, there is need for a sustained reduction in the budget deficit of Sierra Leone as it helps in achieving monetary restraint and low price level, which has real exchange rate, depreciation and improvement in the balance of payments as ultimate external sector benefits.

Attiya, Muhammed and Umiam (2010) proposed a new framework for Pakistan examining the effect of fiscal policy on current account. The empirical results of the Structural Vector Autoregressive approach showed that an expansionary fiscal policy shock improves the current account and depreciates the exchange rate. Hossein and Bahram (2015) investigates the impact of monetary and fiscal policies on balance of payments of Iran between the period 1979 and 2012 using autoregressive techniques and vector error correction method. The study revealed that monetary and fiscal policies have had a negative impact on balance of payments of Iran during the period examined. A study carried out by Vasquer, Javier and Chaquero (2007) propose a methodology for analysing the effect of balance of payments liberalization on measures of poverty and distribution problems in Jamaica with a glossary look at both micro and macro simulation of the cost of rent seeking. In the application to Jamaica, they found that the reallocation of resources away from rent-seeking activities in the presence of exchange controls is significant and has large macroeconomic effects. Opening up of the current account has little effect on poverty, but liberalisation of the capital account reduces poverty, especially among the very poor.

Batool, Memood and Jadoon (2015) examined the relationship between balance of payments and factor determinants in Pakistan within the periods, 1972-2013. Using Autoregressive Distributed Lag (ARDL) model, the result indicated that there exists a stable long run relationship of balance of payments to its determinants. It indicates that real exchange rate inversely influences the balance of payments not only in the long run but also in the short run. Interest rate inversely affect the balance of payments in the long run but positively affects it in the short run. Fiscal balance affects the balance of payments negatively in the long and short runs simultaneously. The real GDP and balance of payments move in positive direction in both long and short runs. The money supply had positive influence on the balance of payments in the short run but negative effect in the long run.

For Nigerian studies, Egwaikhide (1997) examined the effect of budget deficit on the current account within the periods of 1973-1993 using Ordinary Least Squares (OLS) regression model and simulation model. The author found that there exist a strong negative relationship between the budget deficit and the current account balance in Nigeria. The author also found that a budget
deficit caused by increased expenditure leads to deterioration of current account, whether it is financed through central bank credit or external borrowing. He concluded that budget discipline is necessary to achieve external balance in Nigeria.

Tella and Ayinde (2014) examined institutions and sustainable fiscal management between the period 1970 and 2011, using ordinary least square technique to evaluate the relationship among institutional factors and fiscal sustainability indicators. The results found that fiscal policy is both strongly and weakly sustainable in Nigeria. The study also found that despite numerous fiscal rules in various sections of the constitution, poor implementation and weak institutions were found to be responsible for fiscal unsustainability in Nigeria. Oloye (2012) provided empirical evidence in his study of fiscal approach to balance of payments in Nigeria between the period 1970 and 2010 using multiple regression model. The study found that fiscal deficit causes current account deficit indicating a unidirectional causality between fiscal deficit and current account deficit.

In addition, Ajayi (2014) investigated the determinant of balance of payments in Nigeria between 1970 and 2010. The study tests for unit root using Augment Dickey Fuller test, long run relationship using Engel Granger cointegration, long run estimates using ordinary least square and post examination test for reliability of the estimate. The findings revealed that a decline in openness to trade, a lower money supply, a greater private investment, a higher fiscal deficit to economic size, a larger exchange rate and a lesser monetary policy rate will raise the balance of payments profile of the Nigerian economy. Fasoraanti and Amasoma (2013) examined the causal relationship between fiscal deficit and external sector performance measured by external reserves from 1961 to 2011 using VECM and Granger causality tests. The result showed that a long-run relationship exist among the indicators. It further indicated a bi-directional causality between budget deficit and external sector performance in the long run while a one-way causation existed from external sector performance to budget deficit in the short run with no feedback from fiscal deficit.

**Empirical Modeling of Fiscal Policy and Balance of Payments**

The theoretical underpinning of the fiscal approach of balance of payments was developed by Alexander (1952). Under this theoretical approach, the current account balance is defined as the difference between monetary value of domestic production and aggregate demand (absorption). The current account is in surplus when absorption is less than income and in deficit when absorption exceeds income. Government expenditure is an important component of aggregate demand, a factor that has impact on imports. An increase in government outlay that is not met by the available revenue usually
triggers a series of developments in the economy, due to the resultant budget deficit. This discussion can be simplified from the national income identity, which states that:

\[ M_t - X_t = (I - S)_t + (G - T)_t \]  

(1)

Where; \( M \) stands for imports, \( X \) is exports, \( I \) represents investment, \( S \) is savings, and \( G \) and \( T \) denote government expenditures and taxes (revenue) respectively. The balance of trade in goods represented by \( (M - X) \) known as the current account deficit is used to measure balance of payments. Thus, Equation 1 can be rewritten as:

\[ BP_t = (I - S)_t + (G - T)_t \]  

(2)

The interpretation of the above equation is that the current account deficit is the sum of excess investment over savings and the fiscal deficit. Saving is not included in the model because of the high correlation with investment. Output growth is also included into the model because it is an important determinant of current account balance. However, it depends on the transmission mechanism with balance of payments. The model is stated functionally as:

\[ BP_t = f(I_t, G_t, T_t, Y_t) \]  

(3)

The fiscal approach to BOP regression equation is stated econometrically as:

\[ BP_t = \phi_0 + \varphi_1 I_t + \varphi_2 G_t + \varphi_3 T_t + \varphi_4 Y_t + \mu_t \]  

(4)

Where \( BP \) is balance of payments adjustment measured by current account balance (the difference between monetary value of domestic production and aggregate demand) to the percentage of GDP; \( I \) is investment as a percentage of GDP; \( G \) is government expenditure as a percentage of GDP; \( T \) is government tax revenue as a percentage of GDP; \( Y \) is GDP growth; \( \phi \) is constant; \( \varphi_1-4 \) is slope; \( t \) is time; and \( \mu \) is error term. The study also considered fiscal balance in place of government expenditure and government revenue as an indicator of fiscal policy for robustness check.

The theoretical expectation is \( \frac{\partial BP}{\partial G} > 0; \frac{\partial BP}{\partial T} < 0; \frac{\partial BP}{\partial I} > 0; \) and \( \frac{\partial BP}{\partial Y} > 0 \). If government revenue is higher than the expenditure, it indicates higher national savings which can lead to improvement in the current account. More so, it could also be as a result of an increase in foreign direct investment which results in increased domestic tax collection and thus an improved fiscal balance. Investment and output are expected to be positive. The sign of the output growth depends on the transmission mechanism of the impact of growth on the balance of payments. In terms of the current account, increased GDP growth could be a sign of export expansion (thus making trade balance and BOP positive) or sign of faster import growth (thus making trade balance and BOP negative) depending on the relationship.

The data used is mainly secondary, which are sourced from the Central Bank of Nigeria (CBN) statistical bulletin (2015), volume 26 and the National
Bureau of Statistics (NBS). The period considered is from 1981 to 2015. The study employs the Autoregressive Distributed Lag (ARDL) bounds test by Pesaran, Shin and Smith (2001) to estimate the fiscal implication of balance of payments in the long and the short run periods in Nigeria. With this approach, balance of payments is expressed as a function of the lagged value of itself and the current and the lagged values of the explanatory variables. This is expressed as:

\[
\Delta bp_t = a_0 + \sum_{p=1}^{n} b_p \Delta bp_{t-p} + \sum_{p=1}^{n} c_p \Delta i_{t-p} + \sum_{p=1}^{n} d_p \Delta g_{t-p} + \sum_{p=1}^{n} e_p \Delta t_{t-p} + \sum_{p=1}^{n} f_p \Delta y_{t-p} + \rho_1 bp_t + \rho_2 i_t + \rho_3 g_t + \rho_4 t_t + \rho_5 y_t + \varepsilon_t
\]

Where \( \Delta \) is the first difference operator. The parameters \( \rho_i \), where \( i = 1,2,\ldots,5 \) are the respective long run multipliers while the parameters \( b, c, d, e, f \) are the short run dynamic coefficients of the underlying ARDL model in the equation. \( \varepsilon_t \) denotes the white noise error term. The Bounds cointegration test will involve estimating equation (4) and restricting the parameters of the lag level variables to zero.

Based on this equation, we tested the following hypotheses:

\[ H_0 = \rho_1 = \rho_2 = \rho_3 = \rho_4 = \rho_5 = 0 \] (i.e. no cointegration or level relationship) as against \( H_1 = \rho_1 = \rho_2 = \rho_3 = \rho_4 = \rho_5 \neq 0 \).

The existence of cointegrating relationship among the variables is determined by testing the significance of the lag levels of the variables using the F-test. The calculated F-statistic is compared with the two critical values for the upper and lower bounds tabulated by Narayan (2004). Owing to the fact that the direction of cointegration is not a priori established, then each variable is normalised as dependent variable while the existence of level relationship is tested. The study also conducted diagnostic tests such as serial correlation, normality, functional form and heteroskedasticity tests.

**Data Analysis and Interpretation**

**Descriptive Analysis**

The table presents the descriptive analysis of the time series properties of the variables included in the model. The descriptive statistics was carried out on fiscal policy and balance of payments adjustment in Nigeria from 1981 to 2015. The table shows that the average value of balance of payments (BOP), tax (T), government expenditure (G), investment (I) and income (I) stood at 12.5%, 3.3%, 8.9%, 12.7% and 3.7% respectively. The standard deviation of balance of payments (BOP), tax (T), government expenditure (G), investment
and Gross Domestic Product (Y) from their respective long term mean values every year point at 56.8%, 2.1%, 2.6%, 6.4% and 7.7% respectively. The probability value of Jarque-Bera statistics for all variables shows their distribution level at mean zero and constant variance. It indicated that balance of payments, tax, government expenditure, investment and income are not normally distributed.

Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>BP</th>
<th>T</th>
<th>G</th>
<th>I</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>12.48570</td>
<td>3.289598</td>
<td>8.845143</td>
<td>12.71777</td>
<td>3.671135</td>
</tr>
<tr>
<td>Median</td>
<td>1.77547</td>
<td>1.984945</td>
<td>8.280000</td>
<td>11.96524</td>
<td>4.279277</td>
</tr>
<tr>
<td>Maximum</td>
<td>231.7002</td>
<td>8.355930</td>
<td>17.86000</td>
<td>35.22126</td>
<td>33.73578</td>
</tr>
<tr>
<td>Minimum</td>
<td>-97.79560</td>
<td>1.498392</td>
<td>5.150000</td>
<td>5.458996</td>
<td>-13.12788</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>56.83365</td>
<td>2.061987</td>
<td>2.632482</td>
<td>6.414558</td>
<td>7.671722</td>
</tr>
<tr>
<td>Skewness</td>
<td>2.583412</td>
<td>1.269082</td>
<td>1.461350</td>
<td>2.009087</td>
<td>1.179047</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>10.85840</td>
<td>3.226499</td>
<td>5.790797</td>
<td>7.438156</td>
<td>8.588489</td>
</tr>
</tbody>
</table>

Jarque-Bera Probability 128.9903 9.469805 23.81564 52.27097 53.65472
Probability 0.000000 0.008783 0.000007 0.000000 0.000000

Source: Author’s computation (2017)

Figure 1 illustrates the relationship among tax, government spending and balance of payment measured by current account balance in Nigeria during the period of 1981 to 2015. The relationship between the variables is not clear enough to indicate direction. The same relationship was also established in Figure 2 for the relationship between investment, income and balance of payments. The growth rate of current account balance to the economic size recorded deficit value for 12 years while the remaining years recorded surplus.
The growth in investment fluctuates throughout the periods, just like for income.

Thus, the inconclusiveness of the direction of our variables necessitates the need for an empirical analysis.

Table 2: ADF Unit Root Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Tau Statistics</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intercept</td>
<td>Linear Trend</td>
</tr>
<tr>
<td>BP</td>
<td>-4.7530 (3) [-3.6702]*</td>
<td>-4.6965 (3) [-4.2967]*</td>
</tr>
<tr>
<td>T</td>
<td>-9.6210 (0) [-3.6463]*</td>
<td>-9.5146 (0) [-4.2627]*</td>
</tr>
<tr>
<td>G</td>
<td>-5.7921 (0) [-3.6463]*</td>
<td>-5.8423 (0) [-4.2627]*</td>
</tr>
<tr>
<td>I</td>
<td>-4.6916 (0) [-3.6394]*</td>
<td>-3.6175 (0) [-3.5485]**</td>
</tr>
<tr>
<td>Y</td>
<td>-4.8110 (0) [-3.6394]*</td>
<td>-5.2705 (0) [-4.2529]*</td>
</tr>
</tbody>
</table>

Note: *significant at 1%; **significant at 5%; ***significant at 10% Mackinnon critical values and are shown in parenthesis. The lagged numbers shown in brackets are selected using the minimum Schwarz and Akaike Information criteria

Source: Author’s computation (2017)

Unit Root Test Results

Table 2 presents the results of the time series properties of the variables included in the model. This pre-test was carried out before estimating the long-
run and short-run relationship among fiscal policy and balance of payments in Nigeria. The Augmented Dickey Fuller (ADF) unit root test results revealed that investment (I) and gross domestic product (Y) are stationary at levels \([I(0)]\). However, balance of payments (BP), tax (T) and government spending (G) were reported to be stationary at first difference \([I(1)]\). Thus, these series are non-mean reverting at levels and do not converge to their long-run equilibrium until they are first differenced.

**Autoregressive Distributed Lag (ARDL) Results**

**ARDL Cointegration Result**

Econometric literature argued that regressing a stationary series on non-stationary series has severe implications in drawing policy inference. The data series provides evidence for the use of Autoregressive Distributed Lag (ARDL) technique of analysis. As posited by Pesaran *et al.*, (2001), ARDL is more suitable for variables at different order of integration. The F-statistics estimate for testing the existence of long-run relationship between fiscal policy and balance of payments in Nigeria are presented in table 3:

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistics (BP</td>
<td>T, G, I, Y)</td>
<td>8.1158</td>
</tr>
</tbody>
</table>

**Critical Value Bounds**

<table>
<thead>
<tr>
<th>Significance</th>
<th>I0 Bound</th>
<th>I1 Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>2.45</td>
<td>3.52</td>
</tr>
<tr>
<td>5%</td>
<td>2.86</td>
<td>4.01</td>
</tr>
<tr>
<td>2.5%</td>
<td>3.25</td>
<td>4.49</td>
</tr>
<tr>
<td>1%</td>
<td>3.74</td>
<td>5.06</td>
</tr>
</tbody>
</table>

*Source: Author’s computation (2017)*

The estimated F-statistics of the normalised equations \(F_{arb} = 8.1158\) is greater than the lower and upper critical bounds at 1% significance level. It implies that the null hypothesis of no long-run relationship is rejected at 1% significance level. The implication of the estimation is that balance of payments (BOP), tax (T), government expenditure (G), investment (I) and gross domestic product (Y) have equilibrium condition that keep them together in the long-run. It indicated that there is long run relationship between fiscal policy and balance of payments in Nigeria.
**Results of Long-run Estimates of Fiscal Policy and Balance of Payments**

The table below reveals the long-run estimates between fiscal policy and balance of payments in Nigeria.

**Table 4: Long Run Coefficients [ARDL: 4,0,0,3,2]**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>-13.628583</td>
<td>5.440103</td>
<td>-2.505207</td>
<td>0.0227</td>
</tr>
<tr>
<td>G</td>
<td>1.945505</td>
<td>3.608876</td>
<td>0.539089</td>
<td>0.5968</td>
</tr>
<tr>
<td>I</td>
<td>8.986987</td>
<td>3.074199</td>
<td>2.923359</td>
<td>0.0095</td>
</tr>
<tr>
<td>Y</td>
<td>5.280416</td>
<td>2.043247</td>
<td>2.584326</td>
<td>0.0193</td>
</tr>
<tr>
<td>C</td>
<td>-75.485632</td>
<td>58.673303</td>
<td>-1.286541</td>
<td>0.2155</td>
</tr>
</tbody>
</table>

***, **,* indicate 1%, 5% and 10% level of significance respectively

**Source:** Author’s computation (2017)

The long-run estimates suggested that government expenditure (G), investment (I) and gross domestic product (Y) have positive impact on balance of payments (BP) fluctuation in Nigeria; all these conform to theoretical expectation. Specifically, a 1% point increase in government expenditure (G), investment (I) and gross domestic product (Y) increase balance of payments (BP) by 1.95%, 8.99% and 5.28% respectively. However, tax (T) had a negative and significant impact on balance of payments (BP) in Nigeria. This also does conform to a’priori expectation. Tax (T) increase by 1%, balance of payments (BP) is expected to reduce by 13.6%.

**Error Correction Models**

The short-run dynamic relationship between fiscal policy and balance of payments in Nigeria indicating the second part of the estimated ARDL model is reported below in Table 5. The lag lengths were selected based on Akaike Information Criterion (AIC). The table below reveals the short-run dynamic estimates among the variables of interest.
Table 5: Estimated Short-run Error Correction Model [ARDL: 4,0,0,3,2]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(BP(-1))</td>
<td>0.336986</td>
<td>0.282424</td>
<td>1.193192</td>
<td>0.2492</td>
</tr>
<tr>
<td>D(BP(-2))</td>
<td>0.529935</td>
<td>0.247686</td>
<td>2.139544</td>
<td>0.0472</td>
</tr>
<tr>
<td>D(BP(-3))</td>
<td>0.226059</td>
<td>0.191237</td>
<td>1.182088</td>
<td>0.2534</td>
</tr>
<tr>
<td>D(T)</td>
<td>-20.740244</td>
<td>8.649889</td>
<td>-2.397747</td>
<td>0.0283</td>
</tr>
<tr>
<td>D(G)</td>
<td>2.960707</td>
<td>5.702804</td>
<td>0.519167</td>
<td>0.6103</td>
</tr>
<tr>
<td>D(I)</td>
<td>7.733039</td>
<td>6.564928</td>
<td>1.177932</td>
<td>0.2551</td>
</tr>
<tr>
<td>D(I(-1))</td>
<td>-14.138760</td>
<td>7.712025</td>
<td>-1.833340</td>
<td>0.0843</td>
</tr>
<tr>
<td>D(I(-2))</td>
<td>7.760853</td>
<td>4.710639</td>
<td>1.647516</td>
<td>0.1178</td>
</tr>
<tr>
<td>D(Y)</td>
<td>2.462550</td>
<td>1.503944</td>
<td>1.637394</td>
<td>0.1199</td>
</tr>
<tr>
<td>D(Y(-1))</td>
<td>-3.592127</td>
<td>1.791529</td>
<td>-2.005062</td>
<td>0.0611</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>-0.152182</td>
<td>0.036555</td>
<td>-4.163127</td>
<td>0.0007</td>
</tr>
</tbody>
</table>

***, **, * indicate 1%, 5% and 10% level of significance respectively

Source: Author’s computation (2017)

The short-run estimates suggested that the first lag of balance of payments exact positive and significant impact on the current balance of payments adjustment in Nigeria. Thus, the short-run estimates of tax and government expenditure were also shown in the table. The error correction term indicates the speed of adjustment to restore equilibrium in the model. The value is negative and also significant at 1% significance level. Specifically, the lag of the error correction term (ECT) was found statistically significant at 1% level with the coefficient of -0.1521. This indicates that 15.2% of the distortion in the short-run is corrected in the first year in attaining equilibrium or balance of payments adjustment on the basis of the changes in the fiscal policy variables, investment and income in Nigeria.

Diagnostic Tests

The estimated ARDL model is tested for heteroscedasticity, serial correlation, functional form misspecification, parameter stability and normality. The results from these tests are shown in Table 6.

Table 6: Diagnostic Tests of Selected ARDL Model

<table>
<thead>
<tr>
<th>Test</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Correlation:</td>
<td>1.9906 [0.1711]</td>
</tr>
<tr>
<td>Normality Test:</td>
<td>7.4825 [0.0237]</td>
</tr>
<tr>
<td>Functional Form:</td>
<td>1.4362 [0.1401]</td>
</tr>
<tr>
<td>Heteroskedasticity Test:</td>
<td>0.9148 [0.5574]</td>
</tr>
</tbody>
</table>

Source: Author’s computation (2017)

The estimated ARDL model revealed that the model passed the serial correlation, heteroskedasticity and Ramsey RESET tests indicating that the error terms are uncorrelated, same variance and the model is not mis-specified.
However, the normal test showed that the error term is not distributed normally. On average, the tests were satisfactory for the ARDL model.

**Conclusion**

This study examines the effect of fiscal policy on balance of payments adjustment in Nigeria between the periods, 1981-2015. Using the bound testing approach, the study reveals the relationship that exists among tax, government expenditure, investment, GDP and balance of payments adjustment in Nigeria. However, there are few studies that examine these relationships while their results are best described as mixed based on the approaches of the different studies. Based on the ARDL estimates, it was observed that in the long-run, government spending, investment and outputs have positive impact on balance of payments adjustment in Nigeria, however, tax revenue had negative impact on balance of payments in Nigeria. The high deficit finance by the Nigerian government where government spending is greater than tax revenue in most of the years considered had sustained the current account surplus in the country. Therefore, expansionary policies on fiscal policy measures should be encouraged as they play vital role for the growth of the balance of payments in Nigeria. Government economic policies should be directed on diversification of the economy to enhance the performance of manufacturing sector, so as to create more employment opportunities, this is because it may be a more effective way of reducing the level of unemployment and increasing the growth of the economy and hence the BOP. Export promotion and import substitution strategies may have to be stepped up to increase the non-oil exports in order to achieve a favourable BOP in order to achieve a sustainable BOP.

**References**


