Fiscal Policy, Monetary Policy, and Trade Balance Nexus in Nigeria: A New Empirical Evidence

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ABSTRACT
Today fiscal and monetary policy instruments are inextricably linked in macroeconomic management as the macroeconomic variables are interwoven. The broad objective is to analyze the impact of fiscal and monetary policy instruments on the trade balance in Nigeria. This study uses the cointegration method and ordinary least square estimation to examine the impact of fiscal and monetary policy on Nigeria’s trade balance from 1981 to 2018. The co-integration test confirms the existence of a long-run relationship between monetary policy as measured by broad money supply and fiscal policy as measured by government spending, taxation, and trade balance. The empirical findings revealed that the selected monetary and fiscal policy variables did not improve Nigeria’s trade balance during the study period. As a result, the study recommended that the government encourage trade policies that increase exports to attract foreign exchange inflows and foreign investments.

Keywords
export; fiscal policy; import; monetary policy; trade balance

JEL Classification: E51; E62; F1; F31; H61


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INTRODUCTION

Discussions on monetary and fiscal policy issues have been very prominent in economic literature and among policy analysts over the past few decades. In Nigeria, the use of fiscal policy measures for economic management has been affected by the rising level of public debt triggered by the expanding budget deficits. Again, the effective use of fiscal policy measures in Nigeria over the years has been influenced by the pattern of public spending, tax regime, and the overall management of the fiscal framework in the short and long term. According to the Central Bank of Nigeria (CBN), the goal of fiscal and monetary policy is to achieve government economic objectives, which include full employment, high output or high output growth, a stable exchange of rate, a stable price level or a low inflation rate and balance of payments (Central Bank of Nigeria, 2021).

Imbalances in monetary, fiscal, and trade flows have been challenges for policymakers throughout history. Fiscal and monetary policies are major economic policy instruments that macroeconomists and policymakers use to address these problems. Government expenditure and money supply are the major instruments of both policies. Government budget balances can affect the trade balance. A trade deficit always occurs when there is a net inflow of foreign financial investment, while a trade surplus always occurs when there is a net outflow of foreign financial investment. In Nigeria, the Central Bank of Nigeria is charged with the task of implementing the monetary policies of the government. Over the years, the objective of monetary policy in Nigeria has been the attainment of internal and external economic balance (Odungweru & Ewubare, 2020). To execute monetary policy, the CBN uses instruments such as open market operations, discount rates, liquidity ratios; cash reserve ratios, selection credit control exchange rate, and moral suasion. The monetary policy in this regard is highly important; it not only maintains the internal targets of the economy but also monitors the external balance. Countries trade with each other to obtain things that are of better quality or less expensive or simply different from the goods and services produced at home.

A change in the exchange rate helps the monetary authority achieve external balance. In a deficient trade balance, an exchange rate adjustment can be useful. Theoretically, developing countries may need some devaluation to benefit from international trade in the long run. The improvement in the trade balance may, however, not be immediately apparent. Before it can show improvement, it needs to undergo some adjustments. The first adjustment happens during periods of currency depreciation when the trade balance deteriorates. Since initially trade contracts were fixed over
previous exchange rates, there is a delayed response of the trade balance towards the improvement. This phenomenon is referred to as the J-Curve effects (Ashamu, 2020).

The U.S. and Nigeria have a bilateral Trade and Investment Framework Agreement (TIFA) and Nigeria is eligible for preferential trade benefits under the African Growth and Opportunity Act (AGOA). Development assistance from the U.S. through its Agency for International Development was estimated at roughly $800 million for 2017. The trade balance in Nigeria in 2020 was $33.46b which is about an increase of 33.7% from 2019. In 2019 it was $25.01b, an increase of about 212.69% from 2018. In 2018 the trade balance was $8.00b, a 47477.51% increase from 2017, and lastly, in 2017, it was $0.02b, an increase of about 99.82% from 2016 (World Bank, 2020).

The Nigerian government encourages Foreign Direct Investment (FDI). It is estimated that foreign capital flows into all major sectors of the economy from the United Kingdom, the United States, Canada, France, and China. China has re-emerged as a major development, trade, and investment partner of the Nigerian government especially considering Western skittishness in investing in Nigeria due to the recession and restrictive government controls in foreign exchange and international trade. The value of Nigeria’s infrastructure projects has been estimated at US$77 billion, with China being Nigeria’s largest contractor and partner. Road, rail, power, and construction are four sectors in which Chinese state-owned enterprises are undertaking infrastructure projects and the Export-Import Bank of China is financing them (Oqubay & Lin, 2019).

Due to bombing in the Niger Delta region and strong domestic demand for foreign goods, Nigeria’s trade balance has remained positive despite low oil prices and low production (Sayne & Hruby, 2016). Services generally report a deficit. Oil companies import a large amount of technical and financial expertise. Nigeria exports mostly tourism, but both are relatively underdeveloped. A deficit in income balance is a result of foreign oil producers repatriating profits. Nigeria suffers from declining oil revenue, which provides approximately 90% of the nation’s foreign exchange, and crippling debt services due to its inability to tailor import needs to the available foreign exchange (Nwanosike, 2010; Nwanosike et al., 2017). The reason for this is Nigeria’s import-driven economy and the process of deregulation coupled with an appreciable degree of openness during the SAP era, which made the economy susceptible to international trade shocks and widened the size of the trade imbalance. A persistent deficit in the services account contributes to the balance of trade disequilibrium. Between 1950 and 1974, it rose to N1, 314.7m, and from 1993 till date, it has been a phenomenon common to Nigerian economies (Imoisi et al., 2013; Okeke & Awogbemi, 2020). In this case, Nigeria’s balance of trade (BOT) was showing signs of disequilibrium after being managed within a direct control framework for years.
Oil prices slumped in 2014, leading to a fall in foreign exchange receipts. Direct control of the economy, however, proved counterproductive as it became apparent that the economy could not be managed within such a framework (Imoughele & Ismaila, 2015). Amidst complex economic development problems (as summarized by huge external and internal debts, chronic fiscal deficits, severe economic decline, inflationary pressure, and persistent balance of payment deficits), the consensus in Nigeria is that current macroeconomic policy aims at achieving both internal and external balance. Because external sectors affect internal sectors, appropriate policies are needed to address external imbalances in any economy.

Today fiscal and monetary policy instruments are inextricably linked in macroeconomic management as the macroeconomic variables are interwoven. Undoubtedly, findings from this study could be of immense contribution to which option an economy (specifically Nigeria) would adopt in resolving the macroeconomic problems with the recent changes and adding of data in recent time. The broad objective is to analyze the impact of fiscal and monetary policy instruments on the trade balance in Nigeria. The gap here is that a deeper policy insight will be gained from monetary and fiscal policy issues and how they affect trade balance and its policy in Nigeria with the help of recent data which will eventually add to knowledge and literature.

**LITERATURE REVIEW**

**Theoretical Literature**

In the Keynesian analysis, monetary policy plays a crucial role in affecting economic activities. It contends that a change in the supply of money can permanently change such variables as the rate of interest, the aggregate demand, and the level of employment, output, and income. Keynes believed in the existence of unemployment equilibrium. This implies that an increase in money supply can bring about permanent increases in the level of output. The ultimate influence of money supply on the price level depends upon its influence on aggregate demand and the elasticity of the supply of aggregate output (Nwoko et al., 2016; Olakojo et al., 2021).

As indicated by the classical theory, the economy is guided by the invisible hand of the market, and in this way, the most sensible way to deal with fiscal policy is free enterprise (Lin-Hi & Blumberg, 2012). Classicalists, for example, John Mill, David Ricardo, and Adam Smith express that the forces of demand and supply will make the economy self-change expecting the maintenance of full employment and subsequent, economic growth result. They accept that the government of any country ought not to intercede by adopting a fiscal policy or else they will in general destabilize the economy.
by increasing inflation and unemployment. They accept that market forces and the economy consequently lead to full employment equilibrium with stable prices and quick economic growth (Betta, 2016).

In addition, Smith proposed borrowing to reduce the deficit instead of taxing. According to him, borrowing made the government more willing to wage war. According to Smith, governments would be less promiscuously borrowing money if they had to raise money by taxes instead of borrowing (Smith, 2018). According to Smith, government fiscal deficits are caused by the desire of officials to spend, the incapacity and fear of raising taxes, and the lending willingness of capitalists. In the end, Smith concludes, "Public debts lead to deficits that will probably ruin all of Europe’s great nations". Before Keynes’s General Theory in 1936 (Keynes, 2017), economic theory did not support government spending to stabilize.

Absorption theory states that the total output of a country should exceed the total domestic expenditure. Devaluation will improve the trade balance only if there is an increase in the gap between domestic product and consumption (Harberger, 1950; Meade, 1951; Alexander, 1959; Tsiang, 1961). Monetarists argue that the balance of payments is essentially monetary in nature, and explain their position by examining the interaction between demand and supply (Polak, 1957; Hahn, 1959; Mundell, 1971). A surplus demand (supply) for foreign goods would require a surplus of money. A trade balance will improve if there is an oversupply of money. If the excess supply is satisfied by inflows of money from abroad, money supply exceeding demand will result in outflows of money abroad, which will worsen the trade balance if the money supply exceeds the demand.

**Empirical Literature**

Some empirical studies have been done to investigate some aspects of the study under review but a lot remains to be done. For example, Sakanko & Akims (2021) examined monetary policy on Nigeria’s trade balance from 1980 to 2018 with the use of the Auto-regressive Distributed Lag Model (ARDL). The findings show that monetary policy and the effective exchange rate have a long-run co-integration relationship and a significant adverse effect on the trade balance in Nigeria. Similarly, Udude (2015) investigated monetary policy on the balance of payment on trade from 1980 to 2010 adopting the Ordinary Least Square method (OLS). The study revealed that there was a positive relationship between monetary policy and exchange rate and a negative on the interest rate and GDP. Also, Ashamu (2020) investigated monetary policy on foreign trade during period 1981 to 2017 adopting the Error Correction Model (ECM) in the study. The
study revealed that there is a significant relationship, implying that there is a long-run causality between monetary policy and foreign trade in Nigeria.

Keho (2021) used the Mean Group (MG) estimator, Dynamic OLS, and Fully Modified OLS to calculate the trade balance in the West African Economic and Monetary Union (WAEMU) from 1975 to 2017. The result of the research shows that trade balance is negatively related to domestic and foreign income whereas real exchange rate depreciation improves trade balance in the long run. Sakanko & Akims (2021) examined monetary policy on Nigeria’s trade balance between the periods 1980 to 2018 with the use of the Autoregressive Distributed Lag Model. The study found that monetary policy tools of real interest and effective exchange rate depreciation have a long co-integration relationship and significant adverse effects on Nigeria’s trade balance both in the short and long run.

Khosravi & Karimi (2010) use an autoregressive distributed lag approach to cointegration to investigate the relationship between Iran’s monetary policy, fiscal policy, and economic growth. According to the findings, the influence of the exchange rate and inflation on growth was shown to be negative, however it was discovered that government expenditure had a large positively impacting role on growth. Havi & Enu (2014) examined the relative importance of monetary and fiscal policy on the trade balance. The study adopts the ordinary least square method to indicate that monetary policy exacts a more positive impact on the Ghanaian economy than fiscal. Nguyen et al. (2014) used the Structural Vector Autoregression model (SVAR) to examine the effect of the shock from the monetary policy on the trade balance of Vietnam from 2003 to 2011 with monthly data. The resulting review showed that the trade balance was negatively damaged by the shock of increasing interest rates and money supply.

Osisanwo et al. (2015) examined the impact of the Balance of Trade deficit and monetary policy on the economic growth of Nigeria by employing the dynamic econometric model. The result showed a long-run relationship between the Balance of Trade and monetary policy and Nigeria. Folawewo & Osinubi (2006) studied the effect of monetary policy variables on economic growth and balance of trade in Nigeria using the Ordinary Least Squares (OLS) method. The study found that money supply has a positive impact on the growth of gross domestic product (GDP) and balance of payment while money supply has a negative impact on the rate of inflation in the economy. Monacelli & Perotti (2010) estimated fiscal policy on CPI real exchange rate, the trade balance, and their co-movements with GDP and private consumption. The study found that a rise in government spending induces a depreciation of the CPI real exchange rate and a trade balance deficit.
Chukuigwe & Abili (2008) examined the impact of monetary and fiscal policies on net exports in Nigeria through the application of the ordinary least squares (OLS) estimation method. The study indicated that both interest rate and exchange rate have a negative influence on non-oil exports, while budget deficit has a negative effect on non-oil exports of Nigeria. Lane & Perotti (1998) examine trade balance, exports, imports, and fiscal policy in the OECD countries by exploring the short-run impact movement from 1960 to 1995 with the use of panel data. The study found out that the composition of a shift in fiscal policy and the exchange rate regime matter for its transmission to the external account; furthermore, an expansion in wage government consumption causes a contraction in exports and a deterioration of the trade balance.

Other studies that have also investigated the issues of monetary policy or fiscal policy separately (Malaolu et al., 2014; J. Ogbuabor et al., 2014; Anthony-Orji et al., 2019; J. E. Ogbuabor et al., 2020). This current empirical investigation is an improvement on other studies carried out on the topic under study. This is because the literature on the joint impact of monetary and fiscal policy on the trade balance in Nigeria still needs to be covered. In as much as several studies have been carried out, there is still a need to validate previous studies to ascertain the monetary policy and fiscal policy’s effect on the trade balance. Again, the study will equally extend its scope of study from 1981 to 2018. To the authors’ knowledge, no other studies have carried out this condensed analysis in Nigeria. Most of the studies are titled to one side i.e.; they find out the impact of monetary policy on trade balance or fiscal policy on the trade balance in a separate study. Thus, this work will look at both fiscal and monetary policies on trade balances with added variables different from other works.

**METHOD**

Classical economic theory argued that free trade was preferable to mercantilism’s protectionist tendencies in the late 18th century. For a country to maintain an even exchange rate, it was not necessary to build a surplus in its trade balance. The theoretical framework of this study combines elasticity and monetary theories. According to the elastic approach, exchange rate depreciation/devaluation will improve the trade balance if export and import elasticity sum to one.

$$E_X + e_m = 1$$

Where; $e_x$ is the demand elasticity of export and $e_m$ is the demand elasticity for imports. Essentially, depreciation in the exchange rate does have an immediate negative impact, but a positive long-term impact. Monetary theory, on the other hand, says the balance of payments is a financial problem. As a result, the balance of payment
position can be explained by the interaction between demand and supply of money, such that excess demand for foreign goods would increase demand for money. The demand for money (Md) is a stable function of income (Y), price (P), and rate of interest (i)

\[ M_d = f(Y, P, i) \] .................................................................(2)

The money supply (Ms) is a multiple of the monetary base (m) which consists of domestic money (credit) (D) and the country’s foreign exchange reserves (R).

\[ M_s = D + R \] ........................................................................(3)

Since in equilibrium the demand for money equals the money supply

\[ M_d = M_s \] ...........................................................................(4)

Drawing from the above theoretical framework of elasticity and the monetary theory of trade balance, the study employs the Ordinary Least Square (OLS) regression which is a statistical method of analysis that estimates the relationship between one or more independent variables and dependent variables. In this study, the OLS technique will be adopted and carried out in the context of a multivariate model in which there are two or more independent variables. The multiple regression model generally has the following form.

\[ Y_t = \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \ldots \beta_k X_{kt} + \mu_t \] .............................................................................(5)

Where \( \beta \) is a \( k \times 1 \) vector of unknown parameters; the \( \mu_t \) are unobserved scalar random variables (errors) that account for influences upon the responses \( Y_{it} \) from sources other than explanatory variables \( X_{it} \) and \( X_{it} \) is a column vector of the \( ith \) observations of all the explanatory variables.

**Model Specification**

**Model One**

To examine the impact of fiscal policy on the trade balance in Nigeria, the implicit model is defined as:

\[ BOT = F(GEXP, TAX, INF, INTR, EXCH) \] .............................................................(6)

Where

- BOT = Balance of Trade
- GEXP = Government expenditure
- TAX = Tax revenue
- INF = Inflation
- INTR = Interest rate
- EXR = Exchange rate
Econometrically,

\[ BOT = \beta_0 + \beta_1 \log GEX + \beta_2 \log TAX + \beta_3 \text{INF} + \beta_4 \text{INTR} + \beta_5 \text{EXR} + \mu_1 \].............(7)

Where

\( \beta_0 = \) is the intercept term for regression

\( \mu_1 = \) stochastic error term

It is worthy to note that the term “t” is used because we are dealing with time series data. All other variables remain as defined.

**Model Two**

To examine the impact of monetary policy on the trade balance in Nigeria.

\[ BOT = f(\text{MS}, \text{MPR}, \text{INF}, \text{INTR}, \text{EXR}) \]..............................(8)

Where

MS: Money Supply

MPR: Monetary Policy Rate

INF: Inflation

INTR: Interest Rate

EXR: Exchange rate

\[ BOT = \beta_0 + \beta_1 \log \text{MS} + \beta_2 \log \text{MPR} + \beta_3 \log \text{INF} + \beta_4 \text{INTR} + \beta_5 \text{EXR} + \mu_1 \]...........(9)

**RESULTS AND DISCUSSION**

**Unit Root Test**

The results of the Augmented Dicky–Fuller test are reported in Table 1. Analytically the results from the unit root tests show that some variables are stationary at levels (interest rate, inflation, and exchange rate), while some are stationary after the first difference (money supply, monetary policy rate, government expenditure, and taxation), and only trade balance is integrated of order two I(2).

**Table 1**

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF Test Critical Value @ 5%</th>
<th>Level</th>
<th>1st Diff</th>
<th>2nd Diff</th>
<th>Diff Prob</th>
<th>Order of Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB</td>
<td>-3.548490</td>
<td>-1.705634</td>
<td>-0.829343</td>
<td>-11.0447*</td>
<td>0.0000</td>
<td>I(2)</td>
</tr>
<tr>
<td>MS</td>
<td>-3.540328</td>
<td>2.228257</td>
<td>-4.757827*</td>
<td></td>
<td>0.0026</td>
<td>I(1)</td>
</tr>
<tr>
<td>MPR</td>
<td>-3.540328</td>
<td>-2.203872</td>
<td>-6.666362*</td>
<td></td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>GE</td>
<td>-3.557759</td>
<td>1.312216</td>
<td>-4.894079*</td>
<td></td>
<td>0.0022</td>
<td>I(1)</td>
</tr>
<tr>
<td>TAX</td>
<td>-3.540328</td>
<td>-2.819239</td>
<td>-6.438954*</td>
<td></td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>INTR</td>
<td>-3.536601</td>
<td>-7.396542*</td>
<td></td>
<td></td>
<td>0.0000</td>
<td>I(0)</td>
</tr>
</tbody>
</table>
The trace test indicates five (5) co-integration equations at a 5% level. This is evidence from the result presented above, which shows that up to 5, the trace statistic values are less than 5% critical value. Thus, to further confirm this result, the maximum eigenvalue statistic result is presented. Normally, this approach tests the null hypothesis of $r$ versus $r+1$ co-integrating relationships. The null hypothesis is rejected when the max-eigenvalue test statistics exceeds the respective critical value. Column 2 of Table 2 presents the result of this test.

**Table 2**

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistics</th>
<th>0.05 Critical Value</th>
<th>Prob**</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r0$</td>
<td>0.917194</td>
<td>274.2994</td>
<td>159.5297</td>
<td>0.0000</td>
</tr>
<tr>
<td>$r1$</td>
<td>0.799654</td>
<td>184.6143</td>
<td>125.6154</td>
<td>0.0000</td>
</tr>
<tr>
<td>$r2$</td>
<td>0.673834</td>
<td>126.7367</td>
<td>95.75366</td>
<td>0.0001</td>
</tr>
<tr>
<td>$r3$</td>
<td>0.578295</td>
<td>86.40423</td>
<td>69.81889</td>
<td>0.0014</td>
</tr>
<tr>
<td>$r4$</td>
<td>0.558558</td>
<td>55.32007</td>
<td>47.85613</td>
<td>0.0085</td>
</tr>
<tr>
<td>$r5$</td>
<td>0.431806</td>
<td>25.88252</td>
<td>29.79707</td>
<td>0.1322</td>
</tr>
<tr>
<td>$r6$</td>
<td>0.139740</td>
<td>5.532015</td>
<td>15.49471</td>
<td>0.7500</td>
</tr>
<tr>
<td>$r7$</td>
<td>0.003141</td>
<td>0.113259</td>
<td>3.841466</td>
<td>0.7365</td>
</tr>
</tbody>
</table>

Source: Authors’ computation from EViews output

The Max-Eigenvalue test also indicates 3 co-integrating equations at the 5% significance level as described in Table 3. The normalized co-integrating coefficients indicated further that the three co-integrating variables are Trade Balance (TB), Broad Money supply (MS), Monetary Policy Rate (MPR), Government Expenditure (GE), Interest Rate (INTR), Inflation (INF), and Exchange rate (EXR). Therefore, this shows that there is a long-run relationship among the variables.
Table 3
Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistics</th>
<th>0.05 Critical Value</th>
<th>Prob**</th>
</tr>
</thead>
<tbody>
<tr>
<td>r0</td>
<td>0.917194</td>
<td>89.68510</td>
<td>52.36261</td>
<td>0.0000</td>
</tr>
<tr>
<td>r1</td>
<td>0.799654</td>
<td>57.87753</td>
<td>46.23142</td>
<td>0.0019</td>
</tr>
<tr>
<td>r2</td>
<td>0.673834</td>
<td>40.33252</td>
<td>40.07757</td>
<td>0.0468</td>
</tr>
<tr>
<td>r3</td>
<td>0.578295</td>
<td>31.08416</td>
<td>33.87687</td>
<td>0.1040</td>
</tr>
<tr>
<td>r4</td>
<td>0.558558</td>
<td>29.43755</td>
<td>27.58434</td>
<td>0.0286</td>
</tr>
<tr>
<td>r5</td>
<td>0.431806</td>
<td>20.35051</td>
<td>21.13162</td>
<td>0.0640</td>
</tr>
<tr>
<td>r6</td>
<td>0.139740</td>
<td>5.418755</td>
<td>14.26460</td>
<td>0.6883</td>
</tr>
<tr>
<td>r7</td>
<td>0.003141</td>
<td>0.113259</td>
<td>3.841466</td>
<td>0.7365</td>
</tr>
</tbody>
</table>

Source: Authors’ computation from EViews output

Regression result for model one
To examine the impact of fiscal policy on the trade balance in Nigeria, the following model is applied.

\[ BOT = \beta_0 + \beta_1 \log GEX + \beta_2 \log TAX + \beta_3 INF + \beta_4 INTR + \beta_5 EXR \]

Table 4
Regression results on the impact of fiscal policy on the trade balance in Nigeria

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>38.11821</td>
<td>6.256535</td>
<td>6.092544</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOG(GE)</td>
<td>-10.21815</td>
<td>1.240705</td>
<td>-8.235762</td>
<td>0.0000</td>
</tr>
<tr>
<td>LOG(TAX)</td>
<td>-16.20233</td>
<td>2.933959</td>
<td>-5.522343</td>
<td>0.0000</td>
</tr>
<tr>
<td>INF</td>
<td>0.082626</td>
<td>0.119336</td>
<td>0.692379</td>
<td>0.4940</td>
</tr>
<tr>
<td>INTR</td>
<td>0.107531</td>
<td>0.206235</td>
<td>0.521400</td>
<td>0.6059</td>
</tr>
<tr>
<td>EXR</td>
<td>0.176533</td>
<td>0.034437</td>
<td>5.126275</td>
<td>0.0000</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.500268</td>
<td>0.167645</td>
<td>-2.984096</td>
<td>0.0056</td>
</tr>
</tbody>
</table>

Source: Authors’ computation from EViews output

From the result in Table 4, it can be seen that government expenditure and taxation (fiscal policy) show a negative statistical significance to trade balance, and the exchange rate has a positive and statistically significant relationship with trade policy. This does not follow the a priori expectation. The inflation rate and interest rate do not have a significant relationship with the trade balance from the result.

From the estimation above, one percentage change in government expenditure (GE) leads to 10.2% decrease in the trade balance, one percentage change in taxation (TAX) decreases the trade balance by 16.2%, while one percentage change in the
exchange rate (EXR) improves trade balance by 0.17%. The overall result which is the R-Square adjusted shows about 82% goodness of fit and the F-statistic shows a significant result of 29.28383. This result conforms to previous works (Beetsma et al., 2008; Itodo et al., 2017; Adegoriola, 2018; Bonga-Bonga, 2019) that fiscal policy affects trade balance and foreign trade negatively. The implication is that if there is a rise in government expenditure, there will be a fall in commercial balance or net export.

**Regression result for model two**

To examine the impact of monetary policy on the trade balance in Nigeria, this study uses the following model.

\[ BOT = \beta_0 + \beta_1 \log MS + \beta_2 MPR + \beta_3 INF + \beta_4 INR + \beta_5 EXR + \mu_i \]

---

**Table 5**

**Regression results on the impact of monetary policy on the trade balance in Nigeria**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>27.91745</td>
<td>6.102215</td>
<td>4.574970</td>
<td>0.0001</td>
</tr>
<tr>
<td>LOG(MS2)</td>
<td>-9.716829</td>
<td>1.326138</td>
<td>-7.327165</td>
<td>0.0000</td>
</tr>
<tr>
<td>MPR</td>
<td>-1.789905</td>
<td>0.432573</td>
<td>-4.137809</td>
<td>0.0002</td>
</tr>
<tr>
<td>INF</td>
<td>0.178593</td>
<td>0.091024</td>
<td>1.962040</td>
<td>0.0585</td>
</tr>
<tr>
<td>INR</td>
<td>0.081721</td>
<td>0.111602</td>
<td>0.732256</td>
<td>0.4693</td>
</tr>
<tr>
<td>EXR</td>
<td>0.233846</td>
<td>0.038536</td>
<td>6.068226</td>
<td>0.0000</td>
</tr>
<tr>
<td>Adjusted R-Square</td>
<td>0.820569</td>
<td>34.84142</td>
<td>1.665891</td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors' computation from EViews output

From the result of the regression in Table 5, it can be seen that since the Durbin-Watson statistics is 1.665891 which is above 1.5 as a rule of thumb. It means that the regression is free of autocorrelation or serial correlation.

**Table 6**

**Test results for Heteroskedasticity (Breuch-Pagan-Godfrey)**

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>Prob.F(5,32)</th>
<th>0.1702</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-square</td>
<td>7.865935</td>
<td>Prob.Chi-Square(5) 0.1638</td>
</tr>
<tr>
<td>Scaled explained SS</td>
<td>6.312707</td>
<td>Prob.Chi-Square(5) 0.2770</td>
</tr>
</tbody>
</table>

Source: Authors' computation from EViews output

From the test result in Table 6, since the obs*R-square is 7.865935 and its Prob. Chi-Square is 0.1638, which is greater than the 5% (0.05) significant value, we accept the null hypothesis, saying that there is no presence of heteroskedasticity in the regression. From the result above both money supply and monetary policy rate (monetary policy) are negatively statistically significant to trade balance. This does not follow the a priori
expectation. Also, both inflation rate and exchange rate have a positive relationship with trade balance, i.e. Interest rate and Inflation rate are not statistically significant to trade balance.

From the estimation, a percentage change in money supply (MS₂) decreases the trade balance by 9.7%, while a percentage change in monetary policy rate (MPR) leads to about a 1.7% decrease in trade balance and a percentage change in the exchange rate (EXR) improves trade balance to about 0.23%. The overall result which is the R-Square adjusted shows about 82% goodness of fit and the F-statistic shows a significant result of 34.84142. Previous works (Udude, 2015; Itodo et al., 2017; Ashamu, 2020; Sakanko & Akims, 2021) confirm the above result but some of them are positively significant to monetary policy. The economic implication here is that as monetary policy rise there will be a fall in trade balance or net export in Nigeria.

**CONCLUSION**

The study used the Ordinary Least Square (OLS) method in investigating the impact of monetary policy and fiscal policy measures on the trade balance. The data used for the study were sourced from the Central Bank of Nigeria covering from 1981 to 2018. For effective estimation, each objective was modeled differently. To carry out these estimations’ all the structural tests on the data were carried out to achieve an unbiased estimation of the models. The descriptive statistics test was carried out to test the normality of the data. The unit root test was also carried out with the help of Augmented Dickey-Fuller to test for the stationary of all the variables. Johansen’s Co-integration test was also carried out to determine the long-run relationship between the variables. Durbin-Watson statistic test helps to detect the presence of auto-correlation or no auto-correlation in the estimation. The error correction model (ECM) was carried out also the heteroskedasticity test was carried out to confirm if there is a presence of heteroskedasticity in the regression. From the result, it can be seen that government expenditure and taxation (Fiscal policy) show a negative statistical significance to trade balance, and the exchange rate has a positive and statistically significant relationship with trade policy. This deviates from the a priori expectation. As a result, inflation and interest rates have no significant relationship with the trade balance.

Based on the findings, the study recommends that first, the monetary and fiscal authorities in Nigeria should carry out reforms that would enhance the exchange rate and interest rate to mobilize more funds for trade and investment. Second, there should be a reduction in the issuance of foreign currency for the importation of certain items since an increase in imports leads to an increase in demand for foreign currency in the
exporting country. Third, the Nigerian authorities should ensure that the inflation rate comes down to a single digit so that the Naira will appreciate. Fourth, the Nigerian government should concentrate on diversification from oil to other sectors of the economy to increase exportation and reduce importation to have a trade surplus. Finally, the government should encourage policies that will boost export and enhance the export of primary and finished goods to attract foreign exchange inflows and investments.

REFERENCES


