Fiscal-Monetary Policy Mix and Output Response in Nigeria

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Abstract
Over the years, fiscal and monetary policies have been choicely employed by policy makers in Nigeria to influence and stabilize the behavior of the aggregate economy. However, it is pretty difficult for policy makers to ascertain which of the fiscal and monetary actions is actually responsible for driving the economy at a specific point in time. The study examined fiscal-monetary policy mix and output response in Nigeria. Data used for the study were obtained from 2018 CBN statistical bulletin spanning through 1981-2018 and analyzed through the Ordinary Least Square (OLS) using the Error Correction Mechanism (ECM) model. The results of the study indicated that fiscal and monetary policy as the government macroeconomic demand management policies cannot be effective in achieving the desired macroeconomics objectives independently as there exits mutual relationship between them but must be carefully and tactically applied. The implication of this finding is that if government increases public expenditure to infrastructure such as power will enhance the performance of the manufacturing output. The study recommended that there is a need to take a two-tiered policy approach that combines elements of both fiscal and monetary policy. In terms of monetary policy, the federal government through the apex bank should cut interest rates which presumably will allow credit markets to loosen up again, while it is recognized that this is merely a short-term solution. Furthermore, the fiscal policy approach on the part of Apex Bank should include specific initiatives to increase tax cuts for those who are likely to be most affected by non-availability of credit to small and medium-sized businesses that have their entire livelihood sunk in the availability of credit.

Keywords: *Fiscal Policy, Monetary Policy and Public Expenditure.*

1.0 Introduction

Background to the Study

The use of economic policy as tool for economic stabilization by governments of different economies of the world cannot be overemphasized. Some of these policy measures may have economic-wide effect (e.g. the budget and inflation) while others may have specific effects such as the consumption tax on consumer good (Killick, 1981 and Black, Calitz, Steenekamp, Ajam, 2000). Policymakers around the world employ various policies, singly or mix, to stabilize the boom-bust cyclical swings of economic activities. In macroeconomic management, the two most commonly employed policies are the fiscal and monetary policies.

The Monetary policy, managed by the Central Bank, is conducted through changes in the money supply and interest rate. While the Fiscal policy, which is managed by the government of that economy, is conducted through changes in government spending and taxes (Liborio, 2011; Hussain, Wijeweera and Hoang, 2012). Despite the fact that monetary and fiscal policies are implemented by two different bodies, these policies are far from independent. In fact, a change in one may influence the effectiveness of the other and thereby the overall impacts of any policy change. Since 1980s, there has been a general consensus among economists in favour of monetary policy as a more effective stabilization tool relative to fiscal policy (Mishkin, 2004; Mankiw, 2005; and Bullard, 2012); however, the recent global financial crisis of 2007 has renewed much interest on fiscal stimulus.

In recent times, policy makers are prompted to employ unconventional actions to stabilize the national economy. Precisely, while monetary policymakers turn to quantitative easing (the purchase of financial assets so as to lower long-term interest rates, thereby increasing the money supply), fiscal policymakers increase government spending and reduce taxes so as to boost employment and output (Liborio, 2011). The global economic meltdown, which persisted until 2009, had significant adverse effects on the real economic activities of many

developing countries. For instance the Nigerian real GDP growth rate decline from 7.6 per cent in 2006 to 6.0 per cent at the onset of the crises in 2008. The effect of the global crisis was pervasive and its adverse effect remained noticeable in the areas of agriculture, industry and the wholesale sub-sectors in Nigeria (CBN, 2009). Similar trends were also observed in other countries of the world. To ensure that their economies are insulated or protected from the possible negative effects of such snowballing, many countries especially developing countries had resulted to the use of domestic macroeconomic policy to re-engineer their economy and provide some policy palliative that can assist in stabilizing their economies.

Nigeria in particular had, in response to the global economic crisis, introduced both monetary and fiscal stimuli as proactive measures to prevent the economy from nose-diving into further economic depression. The policy measures adopted by government were mainly on three broad fronts namely: monetary policy, fiscal policy and trade policy. In Nigeria, fiscal and monetary policies (especially the tools of government expenditure, money supply and monetary policy rate (MPR)) have been extensively used by the government and other policy makers to stimulate output.. In order to appreciate the policy-source of these variations in output performance over the years, it is necessary to take a retrospective look at the conduct of fiscal and monetary policy in Nigeria.

The theoretical form of macroeconomics variables of fiscal and monetary policies assumed to have positive impact of the level of output performance. The pro-monetary effectiveness studies argue that the effectiveness of the government fiscal policy in a country like Nigeria is very doubtful. Their argument is premised on the fact that: for many years, government has been practicing budget of incremental which has had little correlations with obtained economic performance. More so, the rising trend of government spending over the years seems to have little correlation with growth. Evidence from research has shown that, many a times, large chunk of government expenditure for a proposed project is lost to corruption and utility maximization of the bureaucrats while a little proportion of it actually trickles down for grassroots development, thereby making government spending to have a very weak link, or at best erratic effect, on output performance which is contrary to some theoretical postulations (Ajisafe and Folorunso, 2016; Abata, Kehinde and Bolarinwa, 2017).

Over the years, fiscal and monetary policies have been choicely employed by policy makers in Nigeria to influence and stabilize the behavior of the aggregate economy, with more focus on the tools of government expenditure, broad money and monetary policy rate (MPR) as the operating instruments. However, neither of these policies individually, could be unanimously said to have effectively stimulated economic performance consistently over time. It is against this background that the study seeks to analyze the role of policy interaction in the assessment of the relative effectiveness of fiscal and monetary policy on output response in Nigeria.

Despite the plausibility of various arguments portrayed by these strands of studies on Nigeria, most of them did not consider any form of interaction between fiscal and monetary policy, and a need for policy-mix in their analysis of policy management, which might have affected their outcomes. Significantly, the examination of the nature of policy interaction under different policy regimes in the country shall guide the fiscal policymakers and monetary authority on the optimal policy-mix for a specific target\EW under a similar scenario of a particular policy regime in the future. This study shall guide policy makers of the policy mix that can mitigate the impact of external shock on domestic economy. Also, the outcome of this study shall help the government and the monetary authority to discover some areas of weakness in the choice and usage of specific policy instruments and how to improve on them for effective stabilization. Moreover, the study shall help both fiscal and monetary policymakers to design better policies, as well as make good economic forecasts based on the chosen policy instruments.

Furthermore, the study shall add to existing literature on the interaction of fiscal and monetary policy, especially for developing nations, like Nigeria, where the government has been playing a prominent role while the financial system is at best rudimentary. Finally, the study shall lend a voice to the ongoing

advocacy for a cordial and mutual relationship between the fiscal (government) and monetary (CBN) authorities, especially in the area of policy management and macroeconomic stabilization.

2.0 Literature Review

2.1 Conceptual Issues

Economic Policies and Output

Fiscal policy deals with government deliberate actions in spending money and levying taxes with a view to influencing macro-economic variables in a desired direction. This includes sustainable economic growth, high employment creation and low inflation (Microsoft Corporation, 2004). Thus, fiscal policy aims at stabilizing the economy. Increases in government spending or a reduction in taxes tend to pull the economy out of a recession; while reduced spending or increased taxes slow down a boom (Dornbusch and Fischer, 1990).

Fiscal policy involves the use of government spending, taxation and borrowing to influence the pattern of economic activities and also the level and growth of aggregate demand, output and employment. Fiscal policy entails government's management of the economy through the manipulation of its income and spending power to achieve certain desired macroeconomic objectives (goals) amongst which is economic growth (Medee and Nembee, 2011). Olawunmi and Tajudeen (2007) opine that fiscal policy has conventionally been associated with the use of taxation and public expenditure to influence the level of economic activities. They further said the implementation of fiscal policy is essentially routed through government's budget. Fiscal policy as mostly to achieve macroeconomic policy; it is to reconcile the changes which government modifies in taxation and expenditure, programmes or to regulate the full employment price and total demand to be used through instruments such as government expenditures, taxation and debt management (Hottz-Eakin, Lovely and Tobin, 2009). As noted by Anyanwu (1993), the objective of fiscal policy is to promote economic conditions conducive to business growth while ensuring that any such government actions are consistent with economic stability.

Monetary policy is concerned with discretionary control of money supply by the monetary authorities (Central Bank with Central Government) in order to achieve stated or desired economic goals. Governments try to control the money supply because most governments believe that its rate of growth has an effect on the rate of inflation. Hence, monetary policy comprises those government actions designed to influence the behavior of the monetary sector. Monetary Policy is the deliberate use of monetary instruments (direct and indirect) at the disposal of monetary authorities such as central bank in order to achieve macroeconomic stability. Monetary Policy is essentially the tool for executing the mandate of monetary and price stability. Monetary policy is essentially a programme of action undertaken by the monetary authorities generally the central bank, to control and regulate the supply of money with the public and the flow of credit with a view to achieving predetermined macroeconomic goals (Dwivedi, 2005).

Economic growth has long been considered an important goal of economic policy with a substantial body of research dedicated to explaining how this goal can be achieved (Fadare, 2010). Economic growth has received much attention among scholars. According to Khorravi and Karimi (2010), classical studies estimate that economic growth is largely linked to labour and capital as factors of production. The emergence of the endogenous growth theory has encouraged specialists to question the role of other factors in explaining the economic growth phenomenon (Bogdanov, 2010). Economic growth represents the expansion of a country's potential GDP or output. However, recent evidences on macroeconomic policy management have shown that for effective performance of both fiscal and monetary policy, individual policy transmission is not sufficient, rather, there is a need for policy-mix or interaction as well as a mutual coordination between fiscal and monetary authorities (Leith and Thadden, 2006; Raj, Khundrakpam and Das, 2011). And it is expected that the nature of this interaction, complementarily or confliction, between these policies may have severe consequences on their ability to effectively stabilize the economy or dampen business cycles (Okafor, 2013).

2.2 Empirical Review

Awad and Alsowaidi (2017) studied the effectiveness of fiscal (government expenditure) and monetary (broad money) policy for Qatar using a reduced form model in the fashion of the AJ study for the period 1970-1998. Their result showed that fiscal policy plays a more effective role in determining the behavior of GNP in the Gulf country.

Weeks (2018) for Pakistan, where the long run impact of broad money, government expenditure and inflation on economic growth was investigated through an Error Correction Mechanism (ECM) on annual data from 1977 to 2007, the result shows that government expenditure has a negative impact on growth while money supply has a positive impact, hence supporting the assertion of monetary policy effectiveness

Hussain, Wijeweera and Hoang (2015) explored the potency of fiscal policy (government expenditure) and monetary policy (money supply) on output (real GDP) for five selected ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, and Thailand), using structural co integrating VAR approach on annual data from 1974 to 2007. Real exchange rate and foreign (US) interest rate were also introduced to capture the influence of external macroeconomic fluctuations. Their results show evidence in favour of monetary policy effectiveness for the Philippines, fiscal policy effectiveness for Singapore and Thailand, a mix of both policy for Malaysia, but neither could be clearly determined for Indonesia.

Iyeli, Enang and Emmanuel (2012) investigated the relative effectiveness of monetary (M2) and fiscal (fiscal balance) policy in Nigeria within the standard St. Louis framework but separately for price (domestic inflation) and output (GDP) stabilization functions, using annual data for the period 1970-2010. Their results reveal that monetary policy is more effective relative to fiscal policy in stabilizing the economy (both for price and output); hence they concluded that the increasing profile of government expenditure in Nigeria has no justification since it could not stimulate growth.

Ajisafe and Folorunso (2002**)** tested the relative effectiveness of fiscal-monetary policy as demand management tools for Nigeria. Comparing various measures of fiscal and monetary policy and applying an ECM model to annual data period of 1970-2018, the analysis of their result reveals that monetary policy exact greater influence on GDP relative to fiscal policy.

Okpara and Nwaoha (2010) used a simultaneous equation model to examine the interrelation between government expenditure, money supply, price level and output for Nigeria. Evidence from their result supported the fact that monetary actions are more effective as growth catalyst relatively to fiscal actions.

Similarly, Egwaikhide, Enoma and Saheed (2012), using a structural (simultaneous-equation) model but allowing for dynamic response of policy variables, examined the relative potency of monetary (interest rate) and fiscal (government expenditure) policy in Nigeria, eight equations and twenty one variables. Thus, they concluded that both fiscal and monetary policies are useful tools for stimulating growth, but monetary policy, which has greater impact in short period, weakens out over a longer time horizon, hence becomes ineffective in the long run. Meanwhile, Chuku (2010) examined the interaction between monetary (proxy with monetary policy rate - MPR) and fiscal policy (fiscal balance) in Nigeria using a state-space model with Markov-switching on quarterly data for the period 1970-2008.

2.3 Theoretical Fame-work

Mundel-Fleming's Model

The Mundell–Fleming model is an economic model first set (independently) by Robert Mundell and Marcus Fleming in the early 1960s. The model is an extension of the IS-LM model. Whereas the traditional IS-LM Model deals with economy under autarky (or a closed economy), the Mundell–Fleming model describes an open economy. The Mundell-Fleming model portrays the short-run relationship between an economy's nominal exchange rate, interest rate, and output (in contrast to the closed-economy IS-LM model, which focuses only on the relationship between the interest rate and output). The Mundell–Fleming model has been used to argue that an economy cannot simultaneously maintain a fixed exchange rate, free capital movement, and an independent monetary policy. This principle is called the Mundell–Fleming

"trilemma" (Weeks, 2008; Mankiw, 2007). The model shows that the effect of almost any economic policy on a small open economy depends on whether the exchange rate is floating or fixed. To be more specific, the Mundell-Fleming model shows that the power of monetary and fiscal policy to influence aggregate income depends on the exchange-rate regime. Under floating exchange rates, only monetary policy can affect income. The usual expansionary impact of fiscal policy is offset by a rise in the value of currency. Under fixed exchange rates, only fiscal policy can affect income. The normal potency of monetary policy is lost because the money supply is dedicated to maintaining the exchange rate at the announced level (Mankiw, 2003).

Fiscal Policy and Fixed Exchange Rate Regime

Expansionary fiscal policy (assume an increase in government purchases) will shift the IS-curve to the right, leading to an increase in the level of output and the interest rate. With perfect capital mobility there will be an inflow of capital that will result in a currency appreciation. Under a fixed exchange rate system, the central bank will have to respond by increasing the domestic money supply to avoid currency appreciation. This will shift the LM-curve to the right until the domestic interest rate is again in line with world interest rates. In this case there is no crowding out and the fiscal policy will have the full multiplier effect.

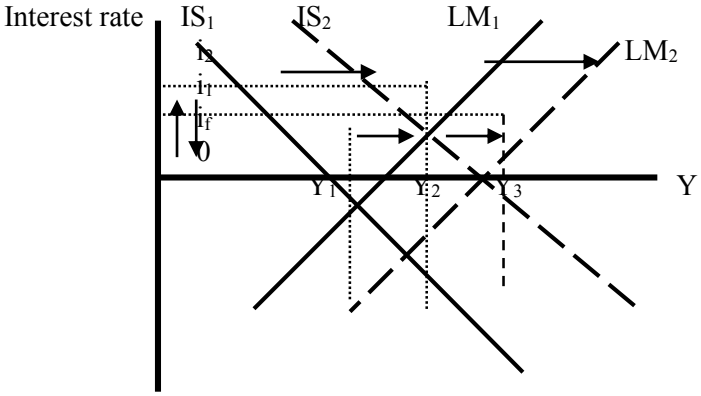

Fig. 1: Fiscal policy and fixed exchange rate regime

Expansionary fiscal policy will have its maximum effect under a fixed exchange rate system with perfect capital mobility. This is because fiscal expansion must always be combined with monetary expansion to bring domestic interest rates back in line with foreign interest rates. Expansionary fiscal policy will increase the level of output demanded and the interest rate. But with perfect capital mobility, the higher domestic interest rates will attract funds from abroad, which will put upward pressure on the value of the domestic currency. To avoid currency appreciation, the central bank will have to increase money supply to bring interest rates back in line with world levels. Therefore, no crowding out will take place and the level of output will increase by the full multiplier effect.

Monetary Policy and Fixed exchange rate regime

Expansionary monetary policy shifts the LM-curve to the right. The domestic currency will begin to depreciate. Under a fixed exchange rate system, however, the central bank cannot allow that to happen and will have to trade foreign currencies for domestic currency, thereby reducing the supply of money. This will shift the LM-curve back to the left, and the foreign reserve holdings of the central bank will fall.

Fiscal Policy and Flexible Exchange Rate Regime

Restrictive fiscal policy under perfect capital mobility and flexible exchange rates will cause a depreciation of the domestic currency that will induce a dollar for dollar increase in net exports such that the level of output demanded will remain unchanged. When government spending is reduced, the IS-curve will shift to

the left and the domestic interest rate will decline below the level of the world interest rate. A capital outflow will occur, leading to a depreciation of the domestic currency. Therefore, net exports will increase since the relative price of domestic goods will now be lower. The decrease in net exports will shift the IS-curve back to its original location. Therefore, the level of output will not change, although its composition will.

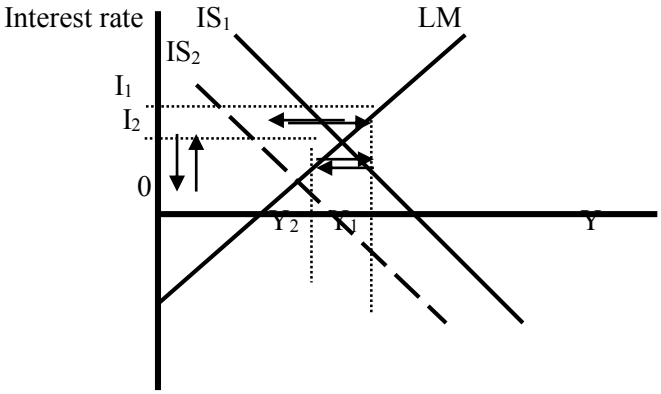

Fig.2: fiscal policy and flexible exchange rate regime

Monetary Policy and Flexible Exchange Rate Regime

A decrease in money supply shifts the LM-curve to the left, so interest rates rise while the level of output demanded decreases. The higher interest rates cause an inflow of capital, which causes the currency to appreciate. This leads to a decline in exports and an increase in imports, since the relative price of domestic goods on world markets has increased. The decline in net exports causes the IS-curve to shift to the left. A new equilibrium will be established at the original interest rate (the world interest rate) but at a lower level of domestic output.

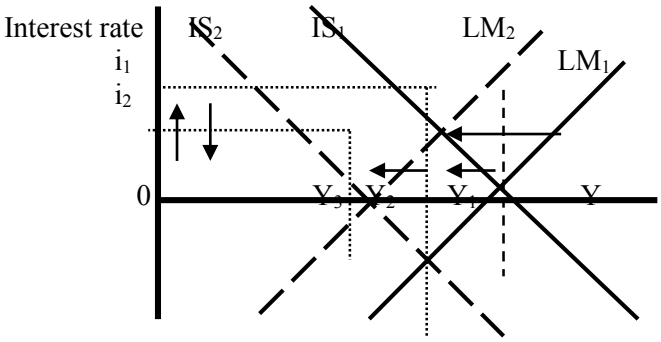

Fig.3: Monetary policy and flexible exchange rate regime

2.4 Limitation of Previous Empirical Studies

Despite the plausibility of earlier empirical studies on the relative effectiveness of fiscal and monetary policy as stabilization tools, especially in Nigeria, many of them suffers specific drawbacks on either theoretical or methodological grounds. Firstly, many of the studies such as (Ajayi, 1974; Aigbokan, 1985; Asogu, 1998 and Iyeli, Enang and Emmanuel, 2012) employed the conventional single-equation St. Louis (AJ) model which has been criticized severally for its arbitrary lag selection process, choices of policy instruments employed, and exogeneity problem of instruments used. Even the use of single-equation ECM model as employed by (Ajisafe and Folorunso, 2002 and Adefeso and Mobolaji, 2010) is not justifiable since the adjustment period of fiscal and monetary policy differs as well as their transmission channels. Secondly, most of the studies reviewed on Nigeria, except Chuku (2010), did not analyze any form of interaction between the policy instruments employed nor provide for any form of policy-mix, hence suggesting

the insinuation that the policies are conducted singly and does not interact with one another. Whereas theoretical and practical evidences have shown that not only do fiscal and monetary policies interact, but the degree of interaction between them could also affect their individual effectiveness. Thirdly, to the extent of and the scope of this reviewed literature, no study in Nigeria has considered the effect of external shock or the influence of external sector otherwise, known as the degree of openness on the Nigerian domestic output. Lastly, most of the studies have not showed empirically the role and potency of monetary and fiscal policy in different exchange regimes and which is most important as such.

3.0 Research Methodology

3.1 Model Specification

The study adopts the Mundell–Fleming model in specifying the study's model with little adjustment in term of external shock variables. The model is specified as follows:

$Y_t = \beta_0 - \beta_1 T_t + \beta_3 G_t + \beta_2 MS_t + \beta_4 (N\text{-}X)_t + \mu_t$……(*i*)

Y = Gross Domestic Product (targeting the Equilibrium Output)
T = Government Revenue
G = Government Expenditure
MS = Money Supply
NX = Net Export.
U = Error term

Hence the model represented by equation (*i*) could be adjusted to reflect this macroeconomic management reality.

The final adjustment is therefore:

$GDP = \beta_0 - \beta_1 GTR + \beta_2 GXP + \beta_3 MS_t + \beta_4 INTR + \beta_5 EXR + \beta_6 OPEN + \mu_t$…….…… (*ii*)

GTR = Government Tax Revenue } Targeting Fiscal policy tools
GXP = Government Expenditure

MS = Money Supply } Targeting Monetary Policy tools
INTR = Interest Rate

EXR = Exchange Rate
OPEN = Degree of Openness } Targeting External Shocks Influence (N-X)
(GDP) = Real output Measures

3.2 Method of Data Analysis

The study employed different econometric tools in the analysis of the data. The method ranges from unit root test to Error Correction Mechanism (ECM) in other to estimate the parameter in achieving the different objectives of the study. The ECM was used because some of the variables were stationary level while some at first Difference and this called for cointegration test as a pre-requisite for ECM.

The paper used annual data to examine the interactive effects of macroeconomic policy and global economic shock on economic growth for Nigeria for the period of 1981 to 2018. The annual time series for all the variables are obtained from Statistical bulletin, annual report and Statement of Account of Central bank of Nigeria. All the variables were expressed in log forms before the analysis. A set of four variables was considered in the model: the real economic variable proxy by the real output measures (Q); Fiscal policy measures (F); monetary policy measures (M) and a measure of external shocks (N-X).

4.0 Results and Discussion

Table 1: Unit root test on variables

Variables	Augmented Dickey-Fuller (ADF) Test			Philip Peron (PP) Test		
	level	1st Difference	Remarks	level	1st Difference	Remarks
RGDP	0.6232	6.3983**	I(1)	9.8049	-5.4907**	I(1)
GR	0.1382	2.8190**	I(1)	-1.3219	-7.5626*	I(1)
GXP	-5.9165*	-8.1246*	I(0)	-5.9320**	-44.9688*	I(0)
MS	6.2586	3.5392**	I(1)	6.6777	-2.4824*	I(1)
EXR	-1.2261	-6.8588*	I(1)	-1.2405	6.8588*	I(1)
INR	-2.4748	-7.2162*	I(1)	-2.4459	-8.7433*	I(1)
OPEN	-3.9086**	-9.9235**	I(1)	-3.9086**	-8.8167*	I(1)

Table 2: Johansen Cointegration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.931566	263.4922	111.7805	0.0000
At most 1 *	0.771453	145.4891	83.93712	0.0000
At most 2 *	0.564960	80.54452	60.06141	0.0004
At most 3 *	0.487986	43.92255	40.17493	0.0200
.At most 4	0.222374	14.46884	24.27596	0.4983
At most 5	0.064924	3.402428	12.32090	0.7950
At most 6	0.010148	0.448810	4.129906	0.5663

Table 3: Long Run Normalized Cointegrating Estimates

Log likelihood -2680.079						
Normalized cointegrating coefficients (standard error in parentheses)						
GDP	**GR**	**GXP**	**MS**	**INTR**	**EXR**	**OPEN**
1.00000	5.727006* (0.54772)	-0.388331* (0.18544)	11.25578* (1.03611)	-36763.29* (41610.5)	32440.75 (0.03000)	-839926.3 (904720.)

*denote statistical significance at 5%

Table 4: The Result of Over Parameterized Regression

Variable	Coeff (Std.Error)	T-Stat (P- Value)	Other Statistics
C	71909.79(91931.25)	0.78 (0.44)	R^2 = 0.88 or 88%
D(GTR)	0.50 (0.28)	1.78 (0.09)	R^2 adjusted = 0.82 or 82%
D(GXP)	-0.03 (0.05)	-0.53(0.60)	F stat = 15.05
D(MS)	1.08 (0.47)	2.32 (0.03)	F prob = 0.00
D(INTR)	63400.66(51295.47)	1.24 (0.23)	Dw = 2.63
D(EXR)	-2078.87(7719.81)	-0.27 (0.79)	
D(OPEN)	-230932(911023.1)	-2.53 (0.02)	
D(GPD(-1))	0.72 (0.18)	3.90 (0.00)	
D(GR(-1))	0.11 (0.3)	0.36 (0.72)	
D(GXP(-1))	-0.08 (0.08)	-0.99 (0.33)	
D(MS(-1))	-1.08 (0.64)	-1.68 (0.10)	
D(INTR(-1))	-45591.7(32255.31)	-1.41 (0.16)	
D(EXR(-1))	13282.53(9488.23)	1.40 (0.17)	
D(OPEN(-1))	-784665(866277.4)	-0.91 (0.37)	
ECT(-1)	-0.39(0.209604)	-1.86 (0.07)	

Table 5: The Result of Parsimonious Error Correction Regression

Variable	Coeff (Std.Error)	T-Stat(Prob Value)	Other Statistics
C	25917.8 (80330.7)	0.32 (0.74)	R^2 = 0.89 or 89%
D(GTR)	-0.075 (0.20)	-3.74 (0.00)	R^2 adjusted = 0.87 or 87%
D(MS)	1.10 (0.38)	2.87 (0.00)	F stat = 37.78
D(INTR)	64.47 (27.4)	2.35 (0.09)	F prob = 0.00
D(OPEN)	-16.66 (6.96)	-2.39 (0.02)	Dw = 2.17
D(GPD(-1))	0.80 (0.11)	6.96 (0.00)	
D(GXP(-1))	-0.05 (0.05)	-1.00 (0.14)	
D(MS(-1))	1.11 (0.51)	2.17 (0.02)	
ECT(-1)	-0.61 (0.14)	-4.21 (0.00)	

Authors' Computation, 2018

Evidence from the unit root test in table 1 above indicated that all the variables are integrated of the same order, that is, the variables have unit roots except GXP. In this wise, the Johansen (1988) co-integration test is applied to test whether the linear combinations of the variables could result in a long-run relationship among the variables. The co-integration result is presented in table 2 shows that the null hypothesis of no cointegrating vector is rejected at none and at most four (4) cointegrating vector at 5% significance level, but the null hypothesis for at most 4 co-integrating vector is accepted at 1%, this means that there are four co-integrating vectors in the model specified in this study: The normalized equation represented in table 3 becomes:

GDP = 5.73GR – 0.39GXP + 11.26MS – 36763.29INTR + 32440.75EXR – 839926.3OPEN

(0.55) (0.19) (1.04) (41610.5) (0.03) (904720)

The standard errors are in parenthesis.

This signifies that in the long-run, Government Revenue (GR), and Money Supply (MS) would be positively related to the output respond while Government Expenditure (GXP), Interest Rate (INTR) and Degree of Openness (OPEN) would be negatively related to output response.

From the reduced parsimonious regression results in table 5, the beta coefficients, GDP is a positive of constant 25917.8; this means that when all variables are held constant, there will be a positive variation up to the tune of 25917.8 units in GDP. The economic implication of this is that in the absence of an effective demand management policy (fiscal-monetary policy and external sector) this tends to peg the output measurement of the sector to the total real GDP in the country at 25917.8 units.

However, regarding fiscal policy measure, the coefficient of Government Tax Revenue (GTR) is negative signed measures a unit changes in GTR (-0.075) will produce a negative impact on the output of the Nigerian economy which is statistically significance at 1% level of significance. This means that when government tax is increased by one unit, domestic output with fall with about 7.5%. This stipulated that tax is can be use to cut the level of disposable income and hence, lower consumption in the economy.

The monetary policy measure; the coefficient of money supply (MS) shows a positive sign signifying a positive impact on the Nigerian output, a unit change in money supply will leads to about 10% positive change in the level of output in the country with 1% level of significance but the lag on money supply MS (-1) shows a negative impact to the economy negating the a-priori expectation, this result is similar to the study of Saibu (2013). Similarly, the value of interest rate (INTR) shows a unit change in bank lending rate will lead to about -6.47 unit change in the level of output in Nigeria. The economic implication of this is that monetary policy instruments must carefully be used with an appropriate monitoring of the corresponding policy measures adopted in order to achieve the desired macroeconomic objectives over time.

Regarding the external sector or external shock variables (EXR and OPEN), the coefficient of the degree of openness (OPEN) has the expected negative sign showing that a unit change in the degree of openness will bring about a reduction of (16.66%) level of output in the country. In this sense, the third objective of the study (the impact of external shock on output in Nigeria) is achieved

From table 5 of the Parsimonious Error Correction Model, the results of the short-run dynamic coefficients associated with the long-run relationships obtained from the ECM equation. The Error Correction Terms (ECT) in the model is highly significant and correctly signed. This indicates adjustment to long-term equilibrium in the dynamic model. Bannerjee, Donaldo & Mestre (1998) posits this as an evidence of a stable long-term relationship. The coefficient of error correction term is -0.62, which gives the speed of adjustment. This implies that deviations from the long-term growth rate in output adjust quickly. Specifically, 62% of the short-run disequilibrium will be adjusted annually to achieve a stable long-run output using the demand management policy variables.

Furthermore, taking the analyses of variation, the value of the R^2 is 89%, revealing that 89% of the variations in the dependent variable (GDP) is caused the explanatory variables (GR, GXP, MS, INTR, OPEN and EXR) while the remaining 11% variation is caused by other variables outside the model. In other words, 89% variation in the level of output in Nigeria is explained by fiscal policy (Government Expenditure and Government Revenue), monetary policy (money supply and interest rate) and external shock (exchange rate and openness). The economic implication of this result is that for significant variation, the government expenditure must be appropriately directed towards productive sector while the monetary policy through the interest rate must be relaxed to encourage the investment in the real sector to show a reasonable impact on the GDP. The 2.17 Durbin Watson (D.W) statistic value in table 4.5 indicates the absence of first order serial correlation in the model and therefore, the parsimonious model is good to fit and well specified

5.0 Conclusion and Recommendations

The study concludes that a fiscal policy rule could make sense in Nigeria, given a complete absence of a tradition of fiscal indiscipline. Fiscal rule commits government to a level of conduct in fiscal and budgetary management, as it facilities the building of government credibility in fiscal management and over time, promotes strong fiscal discipline across all tiers of government. Until the fiscal recklessness of government is checked, the use of fiscal and monetary policies to achieve macroeconomic stability and financial indiscipline will remain an illusion. Predictably, officials offering broad plans for fiscal and monetary policies to alleviate the crisis in the Nigerian financial institutions are numerous but there is yet any one governmental or private sector individual to step forth with a direct and sustainable plan of action. The finding concluded that fiscal and monetary policy as the government macroeconomic demand management policies cannot be effective in achieving the macroeconomics objectives independently as there exits mutual relationship between them but must be carefully applied. This evidence is showed by the bi-directional causality of fiscal and monetary policy instruments.

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