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Shocks in Aggregate Demand to Monetary and Fiscal Policies' Adjustment in Nigeria: A Simulation Approach

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ABSTRACT

The study examined the shocks in aggregate demand to monetary and fiscal policies adjustment in Nigeria using time series annual data from 1986-2022. The study used secondary data obtained from the Central Bank of Nigerian (CBN) Annual Statistical Bulletin, National Bureau of Statistics NBS), and World Bank Financial Report. The study constructs simple structural macroeconomic models made up of three blocks: consumption, investment, and export-import sector that contain 21 variables. The variables are linked to one another through 8 behavioural equations and 4 identities. The models were estimated and analyzed using Two Stage Least Square methods and a simulation experiment was also conducted on the simple structural macroeconomics models. The study finds that broad money supply, interest rate, government expenditure, taxation and public debt have significant influence on aggregated demand in Nigeria during the period under investigation. The baseline simulation demonstrates good tracking power of the actual from the baseline simulation as the nature of the oscillation suggested. The study, recommends that the government should encourage expansionary monetary and fiscal policies by lowering interest rate in order to encourage investors to borrow for investment.

KEYWORDS	Aggregate Demand, Fiscal Policy, Monetary Policy, Simulation

Introduction

Monetary and fiscal tools are used in addressing demand shocks in the economy (CBN, 2017). Monetary policy action is the manipulation of the economy through the use of monetary instruments such as open market operation, money supply, liquidity ratio and interest rates to influence overall demand in the economy (Micheal & Ebibai, 2014), while fiscal instruments are use in manipulation of government spending, taxes, subsidy and debt to control total demand variables in the economy (Ahmad, 2008).

Monetary measure is carryout by the monetary authorities, the Central Bank, while fiscal policy is carryout by the fiscal authorities, the Ministry of Finance (Abdulazeez, 2016). Meanwhile, both monetary and fiscal approaches pursue similar objectives but they apply different tools in achieving them (Abdulazeez, 2016).

On the basis of economic principles, fiscal policy and monetary policy are used to solve economic problems by expanding aggregate demand components and consequently economic growth (Khaysy & Gang, 2017). The reason is that monetary policy and fiscal policy complement each other (Khosravi & Karimi, 2010). The monetarists believe that monetary policy influences economic activity while the Keynesians believe that fiscal policy rather than monetary policy has more influence on economic activity (Khosravi & Karimi, 2010).

Various monetary policies strategies have been adopted by the Central Bank of Nigeria and fiscal policies through the federal ministry of finance over the years

to influence aggregate demand and economic growth (Kibiwot & Chernuyot, 2012). Despite the manipulation of monetary and fiscal variables in Nigeria, the problem affecting its total demand and economic growth continue to expand. Such problems include low investment, low consumption, high unemployment rate, high importation of consumable and capital goods, low exportation etc (Ghulam, 2014). These observed problems are being responsible to the fast reduction in the total demand components and consequently economic growth of Nigeria (Joab & Daney, 2017).

The progressive rise in public spending and reduction in public revenue have been accepted for much of the economic crisis that attack Nigeria about two decades ago resulting in over indebtedness and debt predicament, low investment and growth (Chimobi & Igwe, 2010). For example, Nigeria recorded a rise in budget deficits from N3,902.10 million in 1981 to N8,254.30 million in 1986 to N15,134.70 million in 1989 but launched to N133,389.30 million and N301,401.60 million in 1998 and 2002 respectively (CBN, 2012). As of 2003-2006, public deficits witnessed a marginal felled from N202,724.70 million in 2003, N172,601.30 million in 2004, N161,406.30 million in 2005, to N101,397.50 million in 2006 (CBN, 2012). Between 2001 and 2010, fiscal operations recorded a marked improvement leading to a further decline in fiscal deficits to 2.89 per cent. Fiscal deficit in 2014 was 9,077 million Euros which was equal to 2.13% of the country GDP. It was 15,618 million Euro in 2015, 14,482 million Euro in 2016 and 17, 996 Euro in 2017 which was equivalent to 2.14 trillion Naira (CBN, 2018).

The conflict over which tool (monetary and fiscal) to use is negatively affecting the economy in terms of stimulating macroeconomic variables such as private consumption, private investment, government consumption as well as export in Nigeria (CNB, 2017). Finally, decisions in Nigeria about whether to use monetary policy or fiscal policy tools to achieve macroeconomic policy are, in part, a political decision rather than a purely economic one. These constitute low aggregate demand and consequently economic growth in Nigeria (CNB, 2017).

Literature Review

Conceptual Issues

Monetary Policy: Wrightsman (1976) describes monetary policy as an actions initiated by the Central Bank which aim at influencing the cost and availability of credits. Central Bank of Nigeria (2006) defined monetary policy as a policy measure designed by the federal government through the Central Bank to control cost availability and supply of credit. It also referred to as the regulation of money supply and interest rate by the Central Bank of Nigeria in order to control inflation and to stabilize the currency flow in an economy.

Fiscal Policy: Fiscal policy has to do with the use of revenue collected by the government (mainly taxes) and spending to expand economy activities (O'Sullivan & Steven, 2003). According to Okonjo-Iweala (2003), fiscal policy involves the use of taxes and changes in government spending to expand the level of economic activity.

Aggregate Demand: O'Sullivan and Steven (2003) define aggregate demand as the total demand by all individual and group within a specific period of time. This value is used as an extent of money related flourishing or advancement. Money related methodology impacts absolute enthusiasm through changes in government spending and assessment assortment.

Theoretical Literature

1   The theoretical framework adopted in this study is the IS-LM Framework which was first pointed out by (Hicks, 1937). The IS-LM model is the basic model of aggregate demand that incorporates the money market as well as the goods market (Hicks, 1937). It lays particular stress on the channels through which monetary and fiscal policy affect the economy. The IS-LM model is a standard tool of macroeconomic that demonstrates the relationship between interest rates and real output in the goods and services market and the money market (Hicks, 1937). The intersection of the IS and LM curves is the "General Equilibrium" where there is simultaneous equilibrium in both markets (Hicks, 1937).

Using the IS-LM Model to Analyze Monetary Policy

Monetary measures affect the economy by affecting the interest rate and then by affecting total demand. An expansion in quantity of money reduces the interest rate, increases investment spending and aggregate demand, and thus increases equilibrium output.
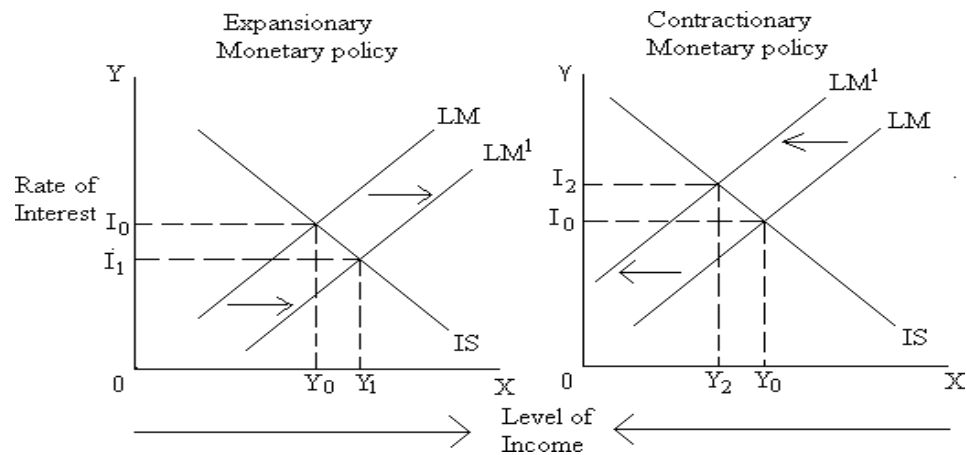

Figure 1: IS-LM Model to Analyze Monetary Policy

An expansionary monetary measure, i.e., it increases the money supply; this would cause the LM curve to shift to the right. This causes GDP to rise and interest rates to fall in the economy. Expansionary monetary measures has a positive impact on Y because the increase in money supply causes interest rates to fall in order to restore money market equilibrium on the goods market side, the lower interest rates result in increased investment spending which in turn increases Y (Hicks, 1937).

Using the IS- LM Model to Analyze Fiscal Policy

Economists refer to increase in government spending or reduction in taxes as expansionary fiscal measures. Reduction in government spending and increases in taxes are referred to as contractionary fiscal measures. An increase in government spending or reductions in taxes increases spending on goods and services which consequently affect expand production of goods and services. This is reflected in a shift out of the IS curve (Hicks, 1937).
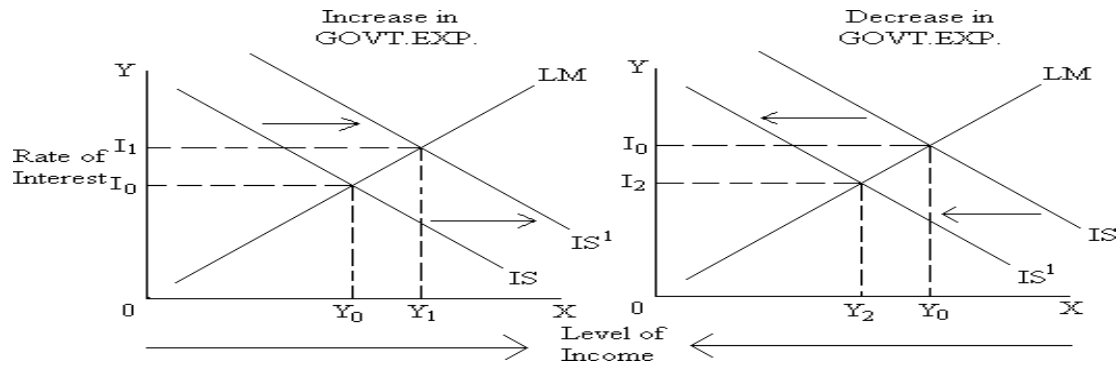
Figure 2: IS-LM Model to Analyze Fiscal Policy

Consider the impact of expansionary fiscal measures initially the economy is in equilibrium at an interest rate of I_0 and an output level of Y_0. This implies that spending on goods and services equals the production of goods and services while the demand for money equals the supply of money. Consider the impact of fiscal measures, we know that this would reduce spending on goods and services and therefore shift the IS curve in. The reduction in government spending decreases spending on goods and service, which affect production of goods and services negatively. This is reflected in a shift in of the IS curve. At the original interest rate I_0 output is now much lower and as a result the demand for money is also less than the money supply. Equilibrium can only be restored if there is a decrease in the interest rate. So we end up at a point i.e. I_2 and Y_2 (Hicks, 1937).

Empirical Review

Yunana and Umar (2020) examined the shocks in aggregate demand to fiscal policy adjustment in Nigeria using time series annual data from 1986-2020. The study constructs simple structural macroeconomic models made up of two blocks: consumption and investment sectors that contain 7 variables. The variables are linked to one another through 4 behavioural equations and 2 identities. The models were estimated and analyzed using Two Stage Least Square methods and a simulation experiment was also conducted on the simple structural macroeconomics models. The study finds that fiscal policy variables (Tax, government expenditure and public debt) have significant influence on aggregated demand in Nigeria during the period under investigation. Similarly, the baseline simulation demonstrates good tracking power of the actual from the baseline simulation as the nature of the oscillation suggested.

Sesay and Abdulai (2017) examine the rate at which changes in monetary policy in Sierra Leone has affected the behavior of private sector investments for the period spanning 1980 – 2014 using vector autoregressive model and the results suggest that money supply and gross domestic saving exert positive and statistically significant effect on private sector investments whereas Treasury bill rate, inflation and gross domestic debt exert a negative effect.

Joab and Daney (2017) examine the impulse on the aggregate demand in Bolivia through the coordination of the monetary and fiscal policy in crisis time. The structure of a Dynamic Stochastic General Equilibrium Model (DSGE) helps us to understand the transmission channels of shocks (in Taylor rule, Phillips curve and public investment) and how the monetary and fiscal policy reacts to these shocks. The coordination of fiscal - monetary policy is evidenced in the impulse response functions of cost push inflation, given that for exogenous inflationary effects, the monetary authorities' response is to raise the interest rate and by the fiscal policy with maintaining a public investment Contractive to avoid even greater inflationary effects.

Khaysy and Gang (2017) examine the impact of monetary policy on the economic development by using annual time series data for the period 1989-2016. Johansen Co-integration and Error Correction Model were employed to analyze the association between variables. The finding shows that money supply; interest rate and inflation rate negatively affect the real GDP per capita in the long run while only the real exchange rate has a positive sign. The error correction model result indicates the existence of short run causality between money supply, real exchange rate and real GDP per capita.

Emad (2017) investigates the short-term effects of fiscal policy shocks including government spending and tax revenue on real gross domestic product in Egypt. He applied Structural vector autoregressive model (SVAR) model and impulse response function (IRF) using annual data for the period 1985-2015. His main findings are: 1) Government spending shock has a negative impact on real gross domestic product. 2) The impact of taxation seems to be less efficient as it has a positive but weak impact on real gross domestic product (GDP). Nevertheless, the impulse response functions were statistically insignificant.

Nursini (2017) examines the effect of fiscal policy and trade openness on economic growth in Indonesia for the period 1990-2015 using vector auto-regressive model. The study shows that government spending on infrastructure and human resources have positive and significant effect on economic growth if they are financed by tax revenue and insignificant if they are financed by foreign loans. Routine government spending has negative and insignificant effect on economic growth for both financed by taxes and foreign loans. Trade openness has positive and significant effect on economic growth.

Material and Methods

Data and Sources

The study uses time series data spanning the period 1986 - 2017. Data were obtained from Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, and other financial documents.

Model Specification

The study constructs macro-econometric model (MEM) with three blocks, consumption block, investment block, and Net export block which contains 21 variables. The variables are linked to one another through 8 behavioural equations and 4 identities. General structure of the model is briefly explained here:

Consumption Sector Block

Total consumption comprises of private consumption and government consumption

$$C_t = P_t{}^C + G_t{}^C \qquad (1)$$

$$P_t{}^C = a_0 + a_1 Y_t{}^d + a_2 INT_t + a_3 MS_t + a_4 GE_t + a_5 Tax_t + \mu_{t1} \qquad (2)$$

$$G_t{}^C = b_0 + b_1 GR_t + b_2 MS_t + b_3 INT_t + b_4 RDEGDP_t + \mu_{t2} \qquad (3)$$

$$Y_t{}^d = c_0 + c_1 GDP_t + c_2 DT_t + c_3 IT_t + c_4 WR_t + c_5 CPI_t + \mu_{t3} \qquad (4)$$

Where C = Total consumption, P^C = Private Consumption, G^C = Government Consumption, G^R = Government Revenue, GE = Government Expenditure, Tax =

Taxation, INT = Interest rate, MS = Money Supply, RDEGDP = Ratio of development expenditure to GDP, WR = Worker's Remittances and CPI = Consumer Price Index

A priory expectation for consumption sector block parameters is: Positive parameters: $\alpha_1, \alpha_3, \alpha_4, b_1, b_2, b_4,$ and c_1, Negative parameters: $\alpha_2, \alpha_5, b_3, c_2, c_3, c_4, c_5$

Investment Sector Block

$$I_t = PI_t + GI_t \tag{5}$$

$$P_t{}^I = a_0 + a_1 INT_t + a_2 MS_t + a_3 Y_t{}^d + a_4 GE_t + a_5 Tax_t + a_6 PD_t + a_7 RPSC_t + \mu_{t1} \tag{6}$$

$$G_t{}^I = b_0 + b_1 INT_t + b_2 MS_t + b_3 PD_t + b_4 GE_t + \mu_{t2} \tag{7}$$

Where I = Total Investment, P^I = Private Investment, INT = Interest Rate, MS = Money Supply, Yd = Disposable Income, GE = Government Expenditure, Tax = Taxation, PD = Public Debt, RPSC = Ratio of Private Sector Credit to GDP, GI= Government Investment.

A priory expectation for consumption sector block parameters is: Positive parameters: $\alpha_2, \alpha_3, \alpha_4, \alpha_7, b_2, b_4,$ Negative parameters: $\alpha_1, \alpha_5, \alpha_6, b_1, b_3.$

Export-Import (NEX) Sector Block

The external sector model is specified as:

$$NEX_t = XP_t - MP_t \tag{8}$$

$$XP_t = \beta_0 + \beta_1 INT_t + \beta_2 EXR_t + \beta_3 MS_t + \beta_4 GE_t + \beta_5 PD_t + U_{t1} \tag{9}$$

$$MP_t = \varkappa_0 + \varkappa_1 MS_t + \varkappa_2 EXR_t + \varkappa_3 INT_t + \varkappa_4 PD_t + \varkappa_5 GE_t + U_{t2} \tag{10}$$

$$EXR_t = \sigma_0 + \sigma_1 MS_t + \sigma_2 INT_t + \sigma_3 PD_t + \sigma_4 GE_t + U_{t3} \tag{11}$$

Where: NEX = Net Export, XP = Export, MP = Import, INT = Interest Rate, GE = Government Expenditure, MS = Money Supply, EXR = Exchange Rate, PD = Public Debt

A priory expectation for external sector block parameters: Positive parameters: $\beta_3, \beta_4, \varkappa_1, \varkappa_5, \sigma_1, \sigma_4,$

Negative parameters: $\beta_1, \beta_2, \beta_5, \varkappa_2, \varkappa_3, \varkappa_4, \sigma_3$

Method of Data Analysis

The study used two stage least square techniques in the estimation of all the 8 behavioural equations in the macro econometric models. This is because the model is designed in a way that some independent variables appear in other equations as dependent variables. Therefore, the use of Ordinary Least Square (OLS) techniques to estimate the equations would give biased and inconsistent estimates of the parameters (Dauda, 2009). Simulation exercise was followed after estimation of the macro econometric model.

Results and Discussion

Results of the Structural Model and Analysis

The stochastic equations specified in chapter three of this study have been estimated using two stages least squared regression model and the results are presented below:

Consumption Sector Block Result

$$PC = 0.63Yd - 0.03INT + 0.96MS + 0.53GE - 0.12TAX \tag{12}$$

$$(3.03) \quad (-3.31) \quad (3.35) \quad (2.58) \quad (2.12)$$

$$R^2 = 0.88, \ R^{-2} = 0.79. \ DW = 2.65$$

$$GC = 0.284GR + 0.572MS - 0.218INT + 0.727RDEGDP \tag{13}$$
$$(3.32) \qquad\qquad (2.53) \qquad\qquad (-1.38) \qquad\qquad (2.58)$$
$$R^2 = 0.74, \ R^{-2} = 0.71. \ DW = 1.93$$

$$Y^d = 0.847GDP - 0.979DT - 0.17IT - 0.36WR - 0.111CPI \tag{14}$$
$$(2.20) \quad (-1.44) \quad (-2.05) \quad (3.47) \quad (-0.42)$$
$$R^2 = 0.46, R^{-2} = 0.41. \ DW = 1.42.$$

The estimated equation 12 show the adjusted coefficient of determination (R^{-2}) is high. The R^{-2} value of 0.79 showed that over 79 percent of the variability in the dependent variable is explained by the joint independent variables in the model. The estimated coefficients of the variables in equation 12 were also very impressive as they fall within a-priori expectation of the study. The disposable income (Yd) variable showed a positive coefficient (0.63). This is an indication that disposable income (Yd) impacted positively on the private consumption (PC). One percent increase in disposable income (Yd) will impact positively on private consumption (PC) by 63%. Other variables that showed positive signs include MS (0.96) and GE (0.53). The coefficient of INT (–0.03) and TAX (–0.12) shows an inverse relationship with private consumption (PC). The values of t-statistics of all the explanatory variables Yd (3.03), INT (–3.31), MS (3.35), GE (2.58) and TAX (2.12) were statistically significant at 5% level. The DW value of 2.17 means no autocorrelation among the variables.

Equation 13 is the estimated result for government consumption (GC). The adjusted coefficient of determination is very high (0.71%), this implies that the function explains 71 percent linear movements in the dependent variable of GC. The result shows that ratio of development expenditure to GDP (RDEGDP), government revenue (GR) and money supply (MS) have positive and significant relationship with government consumption (G^C). The coefficient of ratio of development expenditure to GDP (RDEGDP) is 0.72, government revenue (GR) is 0.28 and money supply (MS) is 0.57. This means that a percentage increase in ratios of development expenditure to GDP (RDEGDP), government revenue (GR) and money supply (MS) will lead to 72%, 28% and 57% increase in government consumption (GC) respectively. Their respective t-values are greater than 2 in absolute terms. The coefficient of interest rate (IN) is –0.281 which means a percentage increase in interest rate (INT) will result to 28% decrease in government consumption (G^C). Interest rate (INT) is statistically insignificant as indicated by its t-value (–1.38).

Equation 14 show the coefficient of gross domestic product (GDP) is 0.85 which show a positive relationship with disposable income (Y^D) and is significant statistically as indicated by its t-value which is greater than 2 (2.20). Direct tax (DT) indicated correct sign as it show an inverse relationship with disposable income (Y^D). An increase in direct tax (DT) by 1% would lead to a decrease in disposable income (Y^D) by 98%. Indirect tax (IT) has coefficient of –0.17 which means that any increase in indirect tax (IT) by 1% will

lead to decrease in disposable income by 17%. Workers' remittances (WR) coefficient is –0.37 and that of consumer price index (CPI) is –0.11. This means that an increase in workers' remittances (WR) and consumer price index (CPI) by 1% would lead to decrease in disposable income (Y^D) by 37% and 11% respectively. The R^2 of 0.47 means that 47% of the variation in disposable income (Y^D) is explained by the explanatory variables (GDP, DT, IT, WR & CPI).

Investment Sector Block Result

$$PI = -2.240INT + 0.814MS - 2.67Yd + 0.1814GE - 0.520TAX - 0.014PD + 0.107RPSC \quad (15)$$

$$(-2.96) \quad (3.46) \quad (-5.14) \quad (4.19) \quad (2.43) \quad (-2.29) \quad (2.84)$$

$$R^2 = 0.90, \ R^{-2} = 0.86. \ DW = 1.98$$

$$GI = -0.018INT + 0.312MS - 0.013PD + 0.926GE$$

$$\quad (16) \quad\quad\quad\quad\quad\quad (-3.53) \quad\quad (2.54) \quad (-1.17) \quad (4.43)$$

$$(1.96) \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad R^2 = 0.57, \ R^{-2} = 0.52.$$

$$DW = 1.53$$

Equation 15 reveals that the R^{-2} which is 0.86 implies that the function explains 86% linear movements in the dependent variable of PI. Private investment (P^I) equation indicates that the model is a good fit as 90% of the variation in private investment (P^I) is explained by the exogenous variables (INT, MS, YD, GE, TAX, PD & RPSC). All the explanatory variables are statistically significant as their t-values are up to 2 in absolute terms. A percentage increase in MS, GE, and RPSC would result to an increase in Private investment (P^I) by 81%, 18%, and 11% respectively while a percentage increase in INT, YD, TAX and PD would lead to decrease in PI by 224%, 267%, 52% and 14% respectively. The DW value of 1.98 is within the rejection region. The study therefore concludes absence of autocorrelation among the variables.

Equation 16 represents the government investment (GI) sector in Nigeria. The estimated result showed that R^{-2} adjusted is 52%. As expected, some of the coefficients exerted high positive significance impact on macroeconomic aggregate of government investment (GI). The coefficients of MS (0.31) and GE (0.92) exert positive influence on the government investment (GI). The coefficient of INT (–0.016) and PD (0.013) exert negative influence on the government investment (GI). All the variables except ND (–1.17) are significant at 5% level.

Export-Import Sector Block Result

$$XP = -0.148INT - 0.085EXR + 0.168MS + 0.115GE - 0.373PD \quad\quad\quad\quad (17)$$

$$(-2.19) \quad\quad (-2.42) \quad\quad (0.42) \quad\quad (4.28) \quad\quad (-2.29)$$

$$R^2 = 0.46, \ R^{-2} = 0.41. \ DW = 1.56$$

$$MP = 0.322MS - 0.045EXR - 0.102INT - 0.104PD + 0.139GE \quad\quad\quad\quad\quad (18)$$

$$(3.09) \quad\quad\quad (1.90) \quad\quad\quad (1.03) \quad\quad\quad (-2.54) \quad\quad\quad (1.53)$$

$$R^2 = 0.58, \ R^{-2} = 0.56. \ DW = 1.99$$

$$EXR = 0.374MS - 0.6231INT - 0.526PD + 0.829GE \quad\quad\quad\quad\quad\quad\quad (19)$$

$$(2.67) \quad (-2.43) \quad\quad (2.01) \quad\quad (1.99)$$

$$R^2 = 0.76, \ R^{-2} = 0.71. \ DW = 1.93$$

Equation 17 revealed that interest rate (INT), exchange rate (EXR), money supply (MS), government expenditure (GE) and national debt (PD) are the variables that determine export (XP) in Nigeria. The Durbin-Watson statistics test showed no presence of autocorrelation. The adjusted R^{-2} high (0.41%). This implies that the function explains 41% variability in the dependent variable. The estimated coefficients of equation 19 indicate that INT, MS and GE have a positive influence on the XP. The coefficients of INT, EXR and PD have significant negative influence on XP. The result indicated that a 1% increase in INT, EXR and PD will decrease XP by 15%, 85% and 37% respectively. The t-values of all the variables show that they are statistically significant at 5 percent level except MS.

Equation 18 shows the relationship between import (MP) and Money supply (MS), Interest rate (INT), public debt (PD), exchange rate (EXR) and government expenditure (GE). The coefficient of MS and GE indicates positive relationship with MP while EXR, INT and PD show negative relationship. The t-statistics indicates that MS and PD are statistically significant as their respective t-values of 3.09 and –2.54 are greater than 2 in absolute terms. The coefficient of determination R^2 is 0.56. This implies that, 56% behaviour of import (MP) is explained by the explanatory variables.

The equation for the relationship between exchange rate (EXR) as dependent variable and money supply (MS), interest rate (INT), public debt (PD) and government expenditure (GE) as explanatory variables is estimated and presented in equation 21. The result reveals that interest rate (INT) and public debt (PD) have negative relationship with exchange rate (EXR) while money supply (MS) and government expenditure (GE) have positive relationship with exchange rate (EXR). All the explanatory variables except government expenditure (GE) are statistically significant as their respective t-values are greater than 2 in absolute terms. The R^2 which measure the goodness of fit of the regression model is 0.76. This means that 76% of variation in exchange rate (EXR) is explained by money supply (MS), interest rate (INT), and public debt (PD) and government expenditure (GE).

Simulation Experiment

Simulations are conducted to test the reliability of the model in predicting the movement of the endogenous variables. Figure 3-7, which show the actual and simulated values of endogenous variables, provides body of facts for the good successful completion of the model.

In figure 3-7, the horizontal axis contains the time period and the vertical axis indicates the number of deviation of that variable from baseline. The graphs show the stochastic dynamic of actual and baseline simulation. Government expenditure (GE), private consumption (PC) and disposable income (Yd), private investment (PI) and government consumption track their historical path well. A careful view of the graphs indicates that the model tracks the time long strip and turning points of the endogenous variables reasonably well. This is a good indication that the model captures the workings of Nigeria's economy with respect to the behaviour of the variables of interest thus, suggesting its suitability for policy simulation.

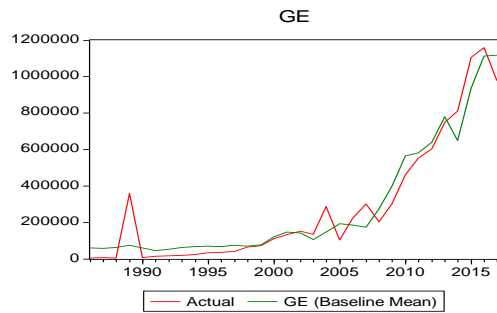**Presentation of Graphs of the Stochastic Dynamic Baseline Simulation**
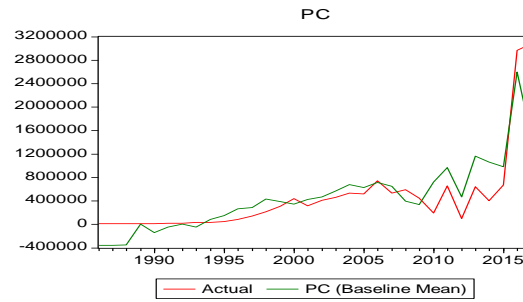
Figure 3: Government Expenditure

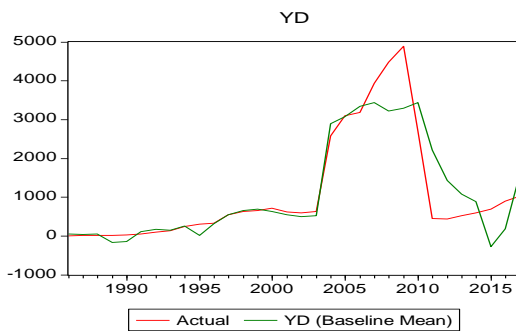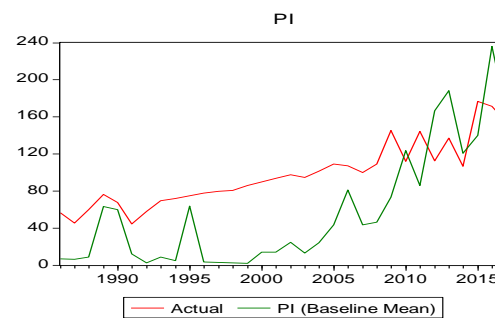Figure 4: Private Consumption

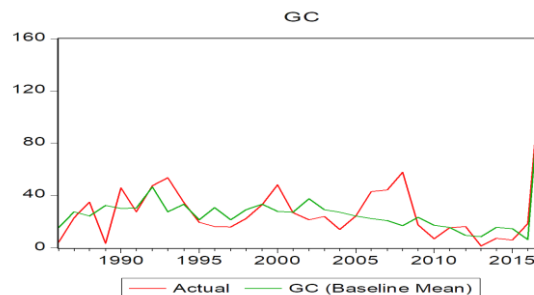Figure 5: Disposable Income

Figure 6: Private Investment

Figure 7: Government Expenditure

Conclusion and Recommendations

To achieve the objective of the study, the study applied macro-econometric model with structural equations which were estimated using two stages least square method (2SLS) and simulation experiment was also performed. The main findings of the study shows that both monetary policy and fiscal policy influence aggregate demand. The study concludes that monetary and fiscal policies are statistically significant in influencing private consumption, private investment and government consumption in Nigeria during the period under investigation. Finally, simulation experiment was performed and a cursory examination of the graphs indicated that the model tracked the time paths and turning points of the endogenous variables reasonably well. This was a good indication that the model captured the workings of the Nigerian economy with respect to the behaviour of the variables of interest thus, suggesting its suitability for policy simulation.

In conclusion, this study is different from other study in terms of variables of monetary and fiscal policies used, the aggregate demand components used and model

and techniques of analysis used in examining the monetary and fiscal policies' effects on aggregate demand in Nigeria.

Some major recommendations for policy making can be drawn from the study. First, Low interest rate should be charged through reduction in monetary policy rate by the monetary authority which will lower the cost of borrowing, encourage investors to borrow more for investment which increases the demand for investment and thereby increases aggregate demand. Monetary authority should increase the supply of money in the economy through open market operation and sales of treasury bill to create a favourable investment climate, create jobs, promote non-oil export and revive industries that are currently operation far below their installed capacity. The study suggest that government should consider restructuring its expenditure pattern by allocating more towards productive expenditure such as capital projects especially in the area of infrastructural development; this will have the effect of both stimulating private consumption and private investment consumption (aggregate demand) and consequently output growth. Furthermore, reduction in both direct and indirect taxes improve the purchasing power of the people which stimulate private consumption (aggregate demand) and consequently economic growth. Lastly, both domestic debt and external debt crowd-out private investment in the short run, government should strive to reduce her debt profile by improving its revenue base.

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