Analysis of the Effects of Monetary Policy on Economic Growth in Nigeria (1980-2018)

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*Abstract:*This study empirically investigates the effectiveness of monetary policy with the aim of examining the effects of money supply and exchange rate on economic growth in Nigeria. The study utilises annual time series data on four germane variables; Gross Domestic Product, broad money supply, exchange rate and foreign reserve from 1980 to 2018. To obtain a robust and reliable results from the data employed in the empirical investigation, various economic techniques like Augmented Dickey Fuller Unit Root Test, Johansen Cointegration Test and Vector Error Correction Model (VECM) were employed and the following information surfaced: None of the variables was stationary at level meaning they all have unit roots. But all the variables became stationary after first difference. The study found that except exchange rate, all the other monetary instruments reflect direct impacts on economic growth in the long run. Broad money supply has positive and significant impact on economic growth in the long-run, exchange rate has a negative and significant impact on economic growth rate in the long-run, and foreign reserve has positive and insignificant impact on economic growth in the long-run. In terms of short run, the study found that broad money supply has a negative relationship with GDP growth rate at lag four. The short-run result also shows a negative relationship between exchange rate and economic growth rate; and with foreign reserve at lag four. Therefore, the study recommends stabilization in exchange rate, proper regulation of money supply and prudential use of the accumulated reserve. Hence, it concludes that maintenance of economic growth rate using monetary policy measures largely depend on the stabilisation of both internal and external values of Naira; proper coordination of monetary and fiscal policies among others.

I. INTRODUCTION

The attainment of macroeconomic goals especially economic growth has always been seen as a principal macroeconomic policy objective of every economy whether developed or developing given the vulnerability of macroeconomic variables to fluctuations in the economy. As a result, economic planners who are responsible for policy guidance formulate and implement policies with a view to achieving sustainable growth rate in output. Conceptually, macroeconomic policies involve the use of monetary and fiscal policies to manage the economic activities. Monetary policy centred primarily on how monetary authorities use monetary instruments at their disposal to influence the decision of economic agents with the intention of enhancing macroeconomic stability.

Despite the attention given to monetary policies in Developing countries, African countries did not escape the global wave of monetary dominance that emerged in the early 1970s in the face of hyper-inflation fuelled in part by the oil crisis. This and other eras of financial crisis have deepened the fluctuations in economic growth rate of some countries like Nigeria. The Nigeria's apex bank has noted that containing inflationary pressures and anchoring inflation expectations are central in stimulating economic growth. In practice, the Central Bank of Nigeria has pursued this by largely focusing on operational and intermediate targets of monetary variables to enhance growth in the country's Gross Domestic Product (GDP).

However, the quest for economic growth has become a herculean task in Nigeria due to lack of proper management of monetary variables. Broad money supply has consistently increased without much effect on economic growth. Persistent increase in exchange rate has deteriorated the value of naira, worsening the macroeconomic problems faced by monetary policy makers over the years. Some good monetary policies were initiated only to be implemented at the wrong time due to bureaucratic process of governance in Nigeria. Foreign reserves have been exhausting because of instability in the prices of crude oil at the international market. These combined effects have mounted negatively on major macroeconomic variables such as prices, output growth, and standard of living amongst others. Meanwhile, the predominantly cost-push inflation in Nigeria has been acknowledged to have adverse effects on the propensity to save and diverts invertible resources into speculative and unproductive investments. Thereby, lowering the standard of living of the people and consequently, decreasing the economic growth rate.

Periodic review of monetary policies by Nigeria monetary authority in order to attain economic growth has little or no effects on major macroeconomic variables. This is partly as a result of the effects of both internal and external changes in economic environment. This is peculiar to most developing countries as they are characterised by weak institutions and

financial underdevelopment which ensure that the effectiveness, transmission and implications of policy differ from those of advanced countries. Against this backdrop and given the recent spates of reduction in both internal and external values of Naira, the need to understand how effective monetary policy in Nigeria is in ensuring economic growth becomes imperative. In view, the study seeks to investigate the effects of monetary policy (using broad money supply, exchange rate and foreign reserves) on the economic growth rate in Nigeria from 1980 to 2018.

II. SOME CONCEPTUAL CLARIFICATION

Macroeconomic Policy: Generally, macroeconomic policy can take many dimensions with specific objectives. These objectives are full employment, price stability, economic growth and balance of payments (Jhingan, 2006). According to Fofack and Ndikumana (2014), macroeconomic policies are classified into growth policy and stabilization policy. To the Keynesians, macroeconomic policy are categorised into two main regulatory frameworks – the fiscal policy and monetary policy. However, at the most aggregate level, macroeconomic policy consists of monetary, fiscal and exchange rate policy. In this study, the classifications of macroeconomic policies by Keynesians is adopted but with primary emphasis on the subject matter (i.e. the monetary policy).

Monetary Policy: Monetary policy is seen as financial policy carried out by a country's monetary authority with a view to controlling the supply of money and general credit available in the economy. It can be seen as any policy undertaken by the monetary authorities usually the Central Bank in order to affect monetary and other financial conditions by influencing the cost and availability of credit in order to achieve the broad objectives of price stability, sustainable growth of output and a healthy balance of payments position (Friedman, 1969).

According to Salter (2014), monetary policy is the regulation of the supply of money by a central bank so as to avoid disequilibrium in the monetary system. To Rowan (1961), monetary policy refers to "discretionary act undertaken by the authorities designed to influence (a) the supply of money (b) cost of money or rate of interest and (c) the availability of money." And it is characterized by four criteria namely goal (the desired result of monetary policy like full employment, economic growth, price stability among others), instruments (the methods used to influence the supply of money like bank rate, changes in reserve ratios, open market operations among others), targets (attempts to quantify the size of a policy decision) and discretion (the degree of flexibility in monetary policy). For the purpose of this study, monetary policy refers to the countercyclical steps taken by monetary authority of a nation for the purpose of achieving sustainability in output growth rate.

Exchange Rate: Exchange rate is the price in which one currency is exchanged for another. It is therefore not surprising that, exchange rate is among the most watched, analysed and government manipulated monetary instrument.

Its fluctuations are believed to influence domestic prices through their effects on aggregate supply and demand and consequently affect economic growth. In this study, it is the rate at which naira is exchanged for the US dollar.

Foreign Reserves: These are reserve assets held by a central bank in foreign currencies, used to back liabilities on their own issued currency as well as to influence monetary policy. They are traditionally used to back a nation's domestic currency. It is the liquid assets held by a country's government or central bank for the purpose of intervening in the foreign exchange market (Black, 2002:183). This variable is very important because Monetary Authorities use it in maintaining the value of currency and exchange rate.

Money Supply: Money Supply is the total money stock in an economy. The importance of an appropriate monetary aggregate can hardly be over emphasized, particularly for those countries that attach their monetary policy to monetary aggregates. M2 measures traveller's cheques of non-bank issuers, demand deposits, Other Checkable Deposits (OCDs) also known as demand deposits and those currencies that consist of M1. Where M1 measures the most liquid forms of money; it is limited to the actual currency in the hands of the general public like currency coins and notes. Economists use the M2 in quantifying the quantum of money in circulation within an economy and their desire to explain the conditions of the monetary economy (Charles and Dike, 2016).

Gross Domestic Product: Friedman (1969) perceived growth as an expansion of the various systems such as education, agriculture, industries, financial institutions, and so on without a change in structure. Economic growth is usually measured by the increase in the amount of goods and services produced in a country.

III. THEORETICAL FRAMEWORK

Monetary theory has evolved overtime. The evolution has drawn the attention of many researchers with different views on the role and dimensions of money in attaining macro-economic objectives. Consequently, a number of scholars have investigated the relationship between monetary policy and other economic aggregates such as inflation and output. It is pertinent to state that each school of thought has its strength and weaknesses with different ideological, theoretical and empirical conclusions. The schools of thought include the Classical Monetary Theory and Keynesian Theory. According to Abdullahi, (2014) the classical theories have two variants/approaches namely Transaction Approach (an approach that examined the link between the total quantity of money M and the total amount of spending on final goods and services produced in the economy) and the Cash Balances Approach also known as Cambridge Equation (an approach that emphasises that the value of money is determined by supply and demand of money). However, the latter (Keynesian Theory) forms the basis under which this study is anchored on.

Prior to the publication of Keynes's General Theory, the classical economists like Jean Baptist Say, Adam Smith, David Ricardo, Pigou and others are of the view that the economy automatically moves towards full employment through the workings of the price mechanism. Through the quantity theory of money, the classical economists attempt to show how money affects the economy using equation of Exchange. In this equation of exchange, Fisher (1892) examined the link between the total quantity of money M and the total amount of spending on final goods and services produced in the economy P*Y, where P is the price level and Y is aggregate output, V is the velocity of money. The equation of exchange thus states that the quantity of money is the main determinant of the price level or the value of money. Any change in the quantity of money produces an exactly proportionate change in the price level. This means that when M changes, nominal income P×Y changes in the same direction.

The Keynesian reformulated model assumes a close economy and a perfect competitive market with fairly price-interest aggregate supply function. The economy is also assumed not to exist at full employment equilibrium and also that it works only in the short run. Given these assumptions, the Keynesian chain of causation between changes in the quantity of money and in prices is an indirect one through the rate of interest. From the Keynesian in the mechanism, monetary policy works by influencing interest rate which influences investment decisions and consequently, output and income via the multipliers' process. Thus, the Keynesian theory is a rejection of Say's Law and the notion that the economy is self-regulating. The theory proposed that money and hence monetary policy has indirect effect on other economic variables by influencing the interest rate which affects investment and cash holding of economic agents. The position of Keynes is that unemployment arises from inadequate aggregate demand which can be increased by increase in money supply which generates increase spending, increase employment and economic growth. In essence, the theory suggests that increase in money supply can reduce unemployment but can also create inflation and so the monetary authorities should increase money supply with caution.

Therefore, the Keynesian reformulated quantity theory of money suggests that with increase in the quantity of money, prices rise only when the level of full employment is reached and not before this. In the light of this, the goal of the monetary authority should be to use its influence to dislodge the economy from its long-period equilibrium position that is characterized by unemployment and propel it toward a long-period equilibrium position that is characterized by full employment.

IV. EMPIRICAL LITERATURE

A number of empirical works on the effectiveness of monetary policy in an economy have been developed over the years. Evidence from advanced economies abounds that monetary policy plays important role in economic growth. However in developing countries like African countries, there is paucity of knowledge on the nexus between monetary policy and economic growth.

Ismail, Adegbemi and Agboluaje (2013) examined the impact of monetary policy on economic growth in Nigeria from 1975 to 2010 using Error Correction Model (ECM) and real GDP, money supply (M2), interest rate, inflation rate, real exchange rate and external reserve as variables. The findings revealed that inflation rate, exchange rate and external reserve are significant monetary policy instruments that drive growth in Nigeria.

Chigbu and Michael (2013) conducted a study to identify the policy (between monetary and fiscal) that contribute most effectively to the level of economic growth in Nigeria covering the period from 1990 to 2010 using VAR model with the following variables; GDP, minimum rediscount rate, interest rate, liquidity rate, corporate income tax and federal budget. The result revealed that fiscal policy exerts greater effect than monetary policy measures on the level of economic development in Nigeria. Apere and Karimo (2014) studied monetary policy effectiveness, output and inflation in Nigeria using time series data from 1970 to 2011 using GDP, monetary policy rate, broad money supply and consumer price index. Their findings indicated that money supply and expected output are the key factors influencing the level of output in the short run (SR). In the long run (LR), interest rate and consumer price are the variables that matters. For inflation in the SR, it was the level of production (output level) that matters while in the LR, monetary policy is more important.

CBN (2014) investigates the effect of monetary policy on different components of real output from 1993 to 2012 using Structural Vector Autoregressive. They find out from the impulse response functions that sectoral output responded heterogeneously following contractionary monetary policy shocks with some immediately responding negatively (services and wholesale/retail sectors), while others displayed lagged negative responses (manufacturing, building and construction, and agriculture). While the result of the forecast error variance decomposition shows that the most important monetary policy variable that explain the variation in sectoral output are interbank call rate and money supply.

Udude (2014) conducted a study to find out the impact of various monetary policy instruments in enhancing economic growth of Nigeria from 1981 to 2012 using Vector Error Correction Model on the variables; GDP, M2, interest rate, exchange rate and liquidity ratio. The study realised that monetary policy did not impact significantly on economic growth of Nigeria within the period. It concluded that the inability of monetary policy to effectively maximise its policy objective is as a result of the shortcomings of the policy

instruments used, which limit its contribution to growth in Nigeria.

Ahmed and Ibitoye (2016) measured the impact of monetary policy on price stability in Nigeria from 1970 to 2014 using OLS. The variables used were money supply, interest rate, exchange rate, debt financing, economic reform and CPI. The result of the empirical analysis indicates that price stability in Nigeria is largely determined by both money supply and interest rate. It revealed that reducing money supply and interest rate will check inflation in Nigeria. Akinjare, Babajide and Okafor (2016) examined the impact of monetary policy on macroeconomic outcomes in Nigeria. OLS was used on the following variables; GDP, exchange rate, interest rate, money supply and inflation rate. Their result revealed that exchange rate and money supply impacted on the economic growth while inflation has negatively affected the Nigeria economy.

Charles and Dike (2016) investigated the effect of monetary policy on stabilizing the economy of Nigeria from 1986 to 2013 using multiple regression and VAR models respectively on the following variables; inflation rate, liquidity ratio, exchange rate and cash reserve requirement. They realised a long run relationship among the variables and confirmed the existence of significant impact of exchange rate on inflation rate.

Anowor and Okorie (2016) conducted a study to empirically reassess the impact of monetary policy on economic growth in Nigeria from 1982 to 2013 using Error Correction Model (ECM) and the following variables; GDP, reserve ratio, interest rate and monetary policy rate. The result shows a significant and positive relationship between cash reserve ratio and economic growth while interest rate and monetary policy rate were statistically insignificant and negatively related to economic growth in Nigeria.

Given the reviewed literature, the study utilises most potent monetary variables (M2 and EXR) in explaining the effectiveness of monetary policy in stimulating economic growth. Foreign reserve (FR) is also used as one of the variables given its pivotal role in the growth of the economy especially during times of financial distress. However, most studies have failed to include it in their studies. According to Chipote and Makhetha-Kosi (2014), FR acts as a liquidity buffer in case of an international financial market crash and eases the vulnerability to external factors. It has the tenacity to boost a country's credit worthiness and provide cushion at a time of economic stress.

V. METHODOLOGY

Following the lead of Chimodi (2010), the study employs a germane econometric model to achieve the empirical results. The econometric model examines the short-run and long-run relationship between real GDPR and M2, EXR and FR by applying the Johansen (1988) co-integration test and the associated Error Correction Model (ECM).

Model Specification

The primary model showing the relationship between economic growth rate and the main monetary variables (money supply, exchange rate and foreign reserve) is specified as thus:

$$GDP = f(M2, EXR, FR) \qquad \text{--(1)}$$

$$GDP_t = \beta_0 + \beta_1 M2_t + \beta_2 EXR_t + \beta_3 FR_t + \mu_t \qquad \text{-(2)}$$

Where; M2 is broad money supply, EXR is exchange rate, FR is foreign reserve and GDP is annual gross domestic product rate. The α_0 and β_0 are constant terms, 't' is the trend and 'μ' is the random error term.

Data Description and Sources

To capture the relationship between economic growth and the associated independent variables, Economic growth is proxied by the annual GDP rate, money supply is proxied by annual broad money supply, exchange rate is proxied by annual exchange rate and foreign reserve is proxied by the total reserve minus gold. Data covers the period from 1980 to 2018. All the variables are taken on annual basis from World Development Indicators and various issues of the Central Bank of Nigeria (CBN) Statistical Bulletin.

Vector Error Correction Model

The Vector Error Correction Model (VECM) shows the speed of adjustment from short-run to long run equilibrium. That is, it directly estimates the speed at which a dependent variable returns to equilibrium after a change in other variables. The a priori expectation is that the VECM coefficient must be negative and lies between (0 and -1) for errors to be corrected in the long run; the higher the VECM, the more the speed of adjustment.

Specification of the model

For a k-variable VAR model with p lag order, we have;

$$Y_t = v + A_1 y_{t-1} + \ldots + A_p y_{t-p} + u_t$$

Where u_t is iid and normally distributed over time. The above model is represented in a VECM form as:

$$\Delta y_t = v + \prod y_{t-1} + \sum_{t=1}^{p-1} \Gamma_i \Delta y_{t-i} + u_t$$

Where $\prod = \sum_{j=i}^{j=p} A_j - I_k$; $\qquad \Gamma = -\sum_{i=i+1}^{j=p} A_j$

Δy_t is an (n x 1) vector of dependent variables at first difference. ∂y_{t-i} is an (n x n) matrix of first differenced lagged values in order i. v is a vector of constants and u_t is an (n x 1) vector of serially uncorrelated error term with a constant variance.

However, the empirical model is given below:

$$\Delta GDP_t = a + \sum_{i=1}^{k-1} \beta_i \Delta M2_{t-i} + \sum_{j=1}^{k-1} \gamma_i \Delta EXR_{t-j} + \sum_{m=1}^{k-1} \delta_m \Delta FR_{t-m} + \pi_1 ECT_{t-1} + U_{lt}$$

Where:

K – 1   = The Lag length is reduced by 1

$\beta_i, \gamma_j, \delta_m, \varepsilon_s, \theta_n$ = Short run dynamic coefficients of the models adjustment long run equilibrium

π_i = Speed of adjustment parameter with a negative sign.

The error correction term is the lagged value of the residuals obtained from the cointegration regression of the dependent variable on the regressors. It contains the Long-run information derived from the long run relationship.

U_{it} = Residuals.

VI. RESULTS AND DISCUSSION OF FINDINGS

Figure 1: Trends of Variables
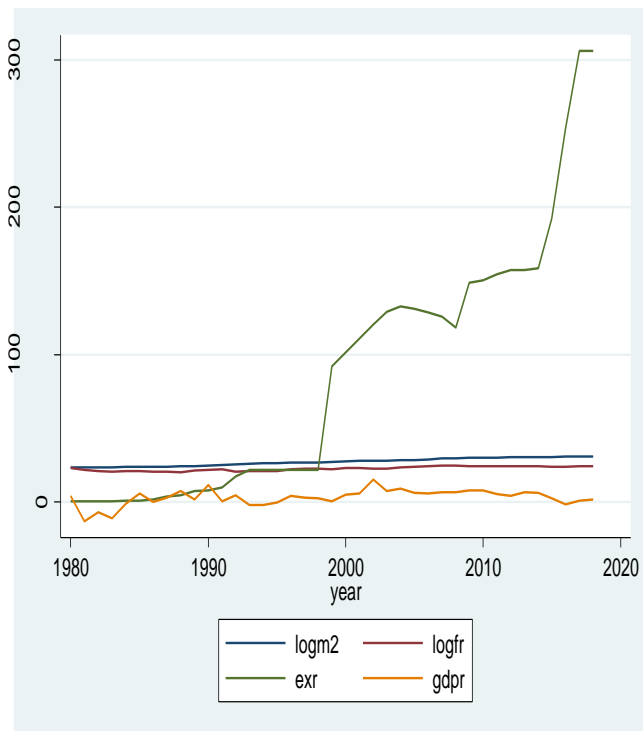
Source: Authors, (2019); (raw data from CBN, 2019)

Figure 1 shows trends in variables over the period examined. It depicts that some series have trends as most of them show signs of convergence in the long-run. Further examination of the graph shows that exchange rate accelerated upwards from early 2000's. GDP growth rate has gone negative in some years due to persistent increase in exchange rate. This is because of the over-reliance on the proceeds from crude oil and the high rate of importation in the country. A country that produces less and depends heavily on importation will fall prey to the vagaries of such external shocks. The plot also shows that total reserves have not improve over the years due to fluctuation in oil prices at the international oil market. While broad money supply moves in the same direction with

GDP. This depicts its impact on economic growth rate especially in developing countries like Nigeria.

Unit Root Test

Table 1. ADF Unit Root Test

Variables	Levels			First Differenced		
	Lag	t-statistics	Probability	Lag	t-statistics	Probability
GDP Rate	9	-3.0072	0.1443	9	-11.4682	0.0000
M2	9	4.6346	1.0000	9	-5.5447	0.0003
EXCH	9	1.8055	0.9996	9	-4.2568	0.0018
FR	9	-0.6638	0.8432	9	-5.6092	0.0000

Source: Authors' computaton, (2019).

Table 1 suggests that all the variables in the study are non-stationary at level. However, after they are transformed into first difference, they became stationary, that is they are integrated at order one.

Optimum Lag Selection Test

Table 2: Optimum Lag Test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2225.478	NA	2.50e+50	127.3987	127.5765	127.4601
1	-2076.921	254.6687	1.30e+47	119.8241	120.7128*	120.1309
2	-2062.447	21.50400	1.47e+47	119.9113	121.5111	120.4635
3	-2033.526	36.35827	7.78e+46	119.1729	121.4837	119.9706
4	-2004.812	29.53483*	4.64e+46*	118.4464*	121.4682	119.4895*
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Using results from table 2, the highest lag that is employed in both the Johansen and VECM models is lag 4 as selected by the three criteria. In addition, lag 4 is selected because FPE suggested it and has the least value among all the criteria.

Johansen Cointegration Test

Table 3. Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.829733	113.5514	47.85613	0.0000
At most 1 *	0.600043	53.35826	29.79707	0.0000
At most 2 *	0.410995	22.20070	15.49471	0.0042
At most 3 *	0.116303	4.203782	3.841466	0.0403
Trace test indicates 4 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.829733	60.19314	27.58434	0.0000
At most 1 *	0.600043	31.15757	21.13162	0.0014
At most 2 *	0.410995	17.99691	14.26460	0.0123
At most 3 *	0.116303	4.203782	3.841466	0.0403
Max-eigenvalue test indicates 4 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' computation, (2019).

As table 3 shows, both Trace and the Max Eigen value tests indicate four cointegrating equations in the system. Consequently, we reject the null hypothesis of no cointegrating vector in favour of four cointegrating vectors. This means that the variables included in the model have long-run association (they are cointegrated).

Normalized Cointegration

Table 4. Johansen Normalised Cointegration

Dependent Variable: GDP

Economic growth (GDP)	M2	EXR	FR
1.000000	2.29E-12 (5.4E-13) [0.42407]	-0.435141 (0.05679) [-7.6623]	1.02E.09 (6.0E-10) [-0.17833]

Source: Author, (2019).

Table 4 contains results of the Johansen normalized cointegration. As shown in the table, all the monetary variables are well-behaved and in line with the expected signs. Apart from exchange rate, broad money supply and foreign reserve reflect direct impact on economic growth rate. For instance with M2 coefficient of 2.29, it means that a 1% increase in money stock brings about 2.29% increase in economic growth rate in the long run. This shows the high magnitude of money supply over economic growth rate. With the EXR coefficient of -0.435141, it implies that, a unit depreciation of the local currency reduces economic growth by 43.51%.This is consistent with the theoretical arguments against currency depreciation. This has justify the impact of exchange rate on economic growth rate in Nigeria given the fact that most goods consumed in the country are imported from foreign countries. This is consistent with the work of Ismail, Adegbemi and Agboluaje (2013) that EXR is a significant monetary policy instrument that drives growth in Nigeria. Lastly, the coefficient of foreign reserve carries a positive sign and is statistically significant at 5%. This is in tandem with the theoretical expectation. The size of the coefficient indicates that a 1% increase in the total reserve would increase the economic growth at the rate of 1.02%. While the positive sign implies that a unit increase in the total reserve would boost foreign trade and exchange rate policy. This, in turn, will increase economic growth rate in the long-run.

The Vector Error Correction Mechanism Result

Table 5. VECM/Short-run Analysis

Dependent Variable: GDPR			
Variable	Coefficient	Std. Error	t-statistic
D(GDPR(-1))	-0.486	0.206	-2.354
D(GDPR(-2))	0.062	0.228	0.271
D(GDPR(-3))	-0.017	0.230	-0.074
D(GDPR(-4))	-0.256	0.171	-1.498
D(M2(-1))	1.92E	1.4E-	1.379
D(M2(-2))	-2.17E	1.8E-	-1.234
D(M2(-3))	2.73E	2.8E-	0.964
D(M2(-4))	-4.18E	2.6E-	-1.612
D(EXR(-1))	0.056	0.064	0.885
D(EXR(-2))	0.054	0.077	0.699
D(EXR(-3))	0.136	0.081	1.679
D(EXR(-4))	-0.034	0.085	-0.395
D(FR(-1))	7.16	2.6E-	0.281
D(FR(-2))	-2.73E	3.9E-	-0.692
D(FR(-3))	1.86E	3.5E-	0.529
D(FR(-4))	-2.06E	2.7E-	-0.757
ECM(-1)	-0.075	0.096	-0.780
R-squared	0.585776		
Adjusted R-Squared	0.145663		
F-statistic	1.330967		

Source:Author, (2019).

The short run analysis of the effectiveness of monetary policy in Nigeria as presented in table 5 on economic growth model shows that the overall coefficient of determination (R^2) indicates that 58.57 percent of growth rate of the economy within the period is explained by the explanatory variables in the model. After the influence of the number of explanatory variables has been purged out as shown by the Adjusted R^2, the dependent variable is still explained by the equation with 14.57 percent.

Further examination of the result reveals that there is a negative and statistically significant relationship between (*GDPR (-4)*) and its past value during the period of study. This implies that the growth experienced in the last four years has significantly impacted negatively on the growth rate in 2018.This is supported by empirical works of Ahmad and Suleiman (2011); Henri and Henri (2011); and Gatawa, Abdulgafar and Olarinde (2017) that the proceed from the past years of positive economic growth are hardly channelled appropriately for more growth and national development due to apparent mismanagement, misappropriation, massive looting of national treasury by corrupt politicians amongst others.

Money supply shows a positive relationship with GDPR at lag 3. Impliedly, it indicates an increase in GDPR at the tune of 2.73 percent. However, at lag 4, it also relates with GDPR negatively. This implies that money supply did not contribute to economic growth in the short-run as posited by Keynes. The justification for this could be that financial institutions (such as Deposit Money Banks) that serveas link between the surplus and deficit unit of the economy are not exercising their responsibilities satisfactorily. The result is in tandem with the works of Taiwo (2012); and Gatawa, Abdulgafar and Olarinde (2017) that attaining sustainable economic growth through increase in money supply in the short run will not be realistic in Nigeria.

(EXR (-4)) indicates that last four years increase in the rate of exchange decreases output in the present year to 3.4 percent. This is consistent with the theoretical expectation. FR at lag 3 shows a positive relationship with GDPR. It turns negative at lag 4. Meaning increase in FR in the past four years had failed to translate to the economic output in the present year. This will not be disassociated from the earlier views of Ahmad and Suleiman (2011); Henri and Henri (2011); and Gatawa, Abdulgafar and Olarinde (2017) on corruption and mismanagement of national resources. The negative and significant coefficient of the ECT_{t-1} suggests that if the system is exposed to a shock, it has the tendency to converge to the long run equilibrium at 7.5 percent per year.

VII. SUMMARY OF MAJOR FINDINGS

The major source of per capital output in any country (developing or developed) with a market economy or centrally planned is an increase in productivity. Per capita output growth is however an important component of economic welfare (Gatawa, Abdulgafar and Olarinde (2017)). Thus, the

attainments of high economic growth rate and price stability have been seen as the reasons for macroeconomic policy making in most countries of the world. In developing countries like Nigeria, monetary policy plays an important role in increasing the growth rate of the economy by influencing the cost and availability of credit, controlling inflation and maintaining equilibrium in the balance of payments. Hence, the study utilized time series data covering a span of 39 years (1980-2018). The data were obtained purely from secondary sources (World Development Indicators, Central Bank of Nigeria Statistical Bulletin, Office of the Accountant General of the Federation, National Bureau of Statistics, Budget and National Planning, the World Bank website). Meanwhile, monetary policy variables such as money supply, exchange rate, foreign reserves as well as economic growth indicator, GDP were selected. Both descriptive statistics and econometric techniques were employed. The variables used were well-behaved and pass both stability and autocorrelation tests respectively.

The LR results show that exchange rate has a negative and significant influence on the rate of economic growth in Nigeria during the period of analysis. Money supply and foreign reserve impacted positively on the growth rate of Nigeria's economy. In SR, the result reveals that there is a negative and statistically significant relationship between (*GDPGR (-4)*) and its past value during the period of study. This shows how previous years of growth in output achieved has significant negative impact on the present year growth rate. It also shows how money supply has no impact on economic growth rate at lag 4(in the SR). Foreign reserve shows similar result as it turns negative at lag 4. Impliedly, previous years of reserve accumulated has little or no impact on the economic growth rate in Nigeria.

VIII. CONCLUSION AND RECOMMENDATIONS

The study concludes that broad money supply impacted positively on economic growth rate in the long run but fails to exert the same impact in the short run. Persistent increase in exchange rates has negative impacts on economic growth rate both in the short run and long run respectively. Foreign reserve also impacted positively on economic growth rate in the long run and negatively in the short run. The study therefore recommends thatmonetary authorities should regulate the quantity of money supply, stabilise the rate of exchange and maintain a sustainable reserve to promote economic growth rate in Nigeria.

The study therefore recommends that monetary authorities should regulate the quantity of money supply, stabilise the rate of exchange and maintain a sustainable reserve to promote economic growth rate in Nigeria.

Given the indirect and significant relationship between exchange rate and GDP, the Central Bank of Nigeria should formulate policies that will stabilize both the internal and external values of Naira. For instance, establishing a stable exchange rate regime will reduce the high volatility of

exchange rate as well its pass-through effect on domestic prices.It also recommends that there should be prudential management of foreign reserves to enhance consistent economic growth rate.

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