Monetary Policy and Economic Growth in Nigeria: An Empirical Analysis.

OKOH, JOHN ONUWA[1] ,OTENE, SAMSON[2]
DEPARTMENT OF ECONOMICS, COLLEGE OF EDUCATION, AGBOR, NIGERIA[1 & 2]

Abstract
This paper examined the impact of monetary policy on economic growth in Nigeria. The Vector Auto-regression Technique (VAR) was used to analyse data between 1980-2017. The result of this paper shows that monetary policy represented by money supply (M2) has a positive impact on economic growth proxy with RGDP. Monetary policy variables-interest rate, money supply, exchange rate and liquidity ratio all had a negative and non significant relationship with inflation. This paper however recommends that the gap between monetary policy formulation and implementation should be bridged so as to ensure the attainment of the set goals, there should be coordination between fiscal and monetary policy measures and that the formal and informal credit sector of the economy so as to prevent counter effect to the monetary policy.
Keywords: Monetary policy, economic growth, Nigeria.

I.   Introduction
Monetary policy refers to the attempt to achieve the national economic goals of full employment without inflation, rapid economic growth and balance-of-payments equilibrium through the control of the economy's supply of money and credit (Iyoha, 2004). Since the rate of interest is the cost of credit, monetary policy includes the control of money supply and the rate of interest. Monetary policy also refers to attempts to influence the external value of a nation's currency (exchange rate management). In Nigeria the Central Bank of Nigeria (CBN) is charged with operating monetary policy although ultimate responsibility lies with the Federal Executive Council. The CBN in addition to this has other important functions which include the issuing of currency, acting as banker to the government and managing public debt (internal and external). To be able to fully implement monetary policies, the CBN makes use of some instruments namely:
- Open Market Operations (OMO)
- Discount rate Mechanism
- Reserve Requirements
- Moral Suasion
- Direct Control of Banking System Credit
- Direct Regulation of Interest Rates

The objectives of monetary include price stability, maintenance of balance of payments equilibrium, promotion of employment and output growth and sustainable development. The importance of price stability derives from harmful effects of price volatility, which undermines the ability of policy makers to achieve other landable macroeconomic objectives. There is indeed a general consensus that domestic price fluctuation undermines the role of money as a store of value and frustrates investment and growth (Adigwe, Echekoba&Onyeagba, 2015).
In Nigeria, there have been various regimes of monetary policy (either tight or loose) used to stabilize prices. The economy has witnessed boom and recession but the growth recorded has not been sustainable as there has been evidence of macroeconomic instability. It is pertinent to ascertain whether the periods of economic growth can be attributed to appropriate monetary policy and whether the periods of economic downturn is attributable to ineffectiveness of monetary policy.

Problem of the Study
The inability of monetary policy in stabilizing prices has brought about instability in economic growth process in Nigeria. A review of economic growth pattern reveals a secular swing: 1965-1969 recorded rapid decline due to the civil War, 1970-1971 was revival period, 1972-1980 was boom period, there was a crash in growth rates during 1981-1984, 1985-1991 saw a renewal in economic growth rate, 2011-mid 2014 saw an increased growth rate, 2015-2018 the economy suffered a recession. Despite the different monetary policy

----

regimes adopted by the CBN so far in Nigeria, inflation is still a threat to economic growth in Nigeria.Inflationary pressure is still rife in Nigeria. As a matter of fact, inflation rose to 11.81% as at October 2019 (NBS 2019). The growth of money supply is correlated with high inflation because money growth was often in excess of real economic growth. The dualistic nature of financial and product market in Nigeria amounts to fundamental constraint affecting the formulation and efficient implementation of effective monetary policy.

According to Adigwe et al (2015) "the informal sector in Nigeria accounts for about 30 percent of the GDP, thus the existence of a large gray market (both credit and exchange rate market) in Nigeria has numerous implications for the transmission mechanism of monetary policy. Moreso, the payment system in Nigeria is predominantly cash and dominance of cash transactions increases money supply/currency in circulation. The percentage of the banking population is quite low in Nigeria. According to the CBN in 2018, 58.4% of Nigeria's 96.4 million adults were financially included comprising of 38.3% banked, 10.3% served by other formal institutions and 9.8% served by informal service providers. The CBN intends to reach out to 60 million unbanked population by 2020. All these makes monetary control difficult. This paper however intends to examine empirically the aforementioned issues so as to ascertain the effect of monetary policy on economic growth in Nigeria using the VAR methodology.

Objectives of the Study
The broad objective of this paper is to examine the overall effect of monetary policy on economic growth in Nigeria. The specific objectives includes:
* to examine the effect of monetary policy on economic growth in Nigeria
* toascertain the effect of monetary policy on inflation in Nigeria.

Hypotheses of the Study
The following hypotheses have been developed for this paper
* Monetary policy do not have significant impact on economic growth in Nigeria
* Monetary policy does not have significant effect on inflation in Nigeria
This paper covers a period of forty-seven years (37) i.e. 1980-2017. Thispaper is divided into five sections: section one is Introduction, Section two is Review of Empirical Literature. Section three is Research Methodology while Section four and five are Presentation and Analysis and Summary respectively.

II. Literature Review
Review of Empirical Literature
The extent which monetary policies influenced the macroeconomic variables especially price stability and ultimately economic growth in the economy have been under discussion over the years. In order to appreciate the impact of the monetary policies on economic growth in Nigeria, it will be pertinent to review some empirical view of researchers on this monetary influenced.

Migeul andLiviantan(1988) examined the effectiveness of adopting stabilization measures in managing inflation for selectedLatin American countries. Their they findings failed to show any relationship between money supply and inflation. Therefore, they concluded that use of nominal variables, notably money supply, is necessary but not sufficient condition for successful inflation management. They recommended the inclusion of fiscal restraints in the policy package.

Asogu (1991) adopted a general econometric approach to indentify and assess the relation and contributions of the factors responsible for inflation, notably money supply in the Nigerian economy.He employed the single equation approach and expressed inflation as a function of money supply and its lagged values. The result of the empirical investigation confirmed that monetary policy alone cannot be an effective means of controlling inflation in Nigeria as long as the government fiscal discipline, especially with regard to deficit expenditure is not incorporated into the entire stabilization policy package. Further analysis revealed that changes in income and food prices explain the presence of inflation in the country. Judging from the results, it follows that the monetarist model does not adequately explain inflationary process in Nigeria.

After critical evaluation of the monetary and banking policies in Nigeria in the late 1980s, Odozi (1992) attributed inflation in Nigeria to increase in money supply and argued that the continued reliance on monetary policy as anti-inflationary tool will yield the desired result. This argument is a reflection of his observation: inflation rate rose from 20.2 percent in 1987 to 38.3 percent in 1988 as money growth rate increased sharply from 13.7 percent in the same period.

Odozi (1977) argued that although there are other factors associated with the rise in the general price level, inflation is basically a monetary phenomenon in the sense that it cannot last without an accommodating increase in money supply. It is money that ultimately exerts a determining effect on the price level, thus, the persistent growth in money leads to a sustained rise in the price level, a condition not conducive for sustained

real output growth. He further maintained that provided there are idle resources, expansion in money stock would stimulate aggregate spending and output without unduly understanding price stability. However, if there are constraints, be it technological limitations, productivity shortfall, or foreign exchange bottleneck, monetary expansion would tend to be inflationary.

Jekumber and Mustapha (1998) in their study on "The Relative Effectiveness of Monetary Policy in Promoting Economic Growth in Nigeria" using Time Series Analysis believed thatthe impact of monetary policy could be analyzed in terms of the behaviours of the intermediate targets of consumer price index and inflation rate in promoting economic growth in Nigeria. Their analysis was expressed using time series, which provided evidence that the income elasticity of demand for money is inversely related to the state of is however doubtful because, of the difficulty in linking monetary policy with overall economic performance.

Morander and Schmidt (2002) examined the role of the inflation targeting in achieving price stability in Chile using vector autoregressive models. The VARs models used six endogenous variables (interest rates, wages, GDP, consumer price index, money supply and nominal exchange rate) and two endogenous variables (the terms of trade, US consumer price index) The empirical evidence reveals that an announcement of an exploited inflation rate and adoption of a supportive money policy and a floating exchange rate regime that lend credibility to that target were instrumental to achieving price stability.

Coenan, Orphanides, and Wieland (2003) carried out a study on price stability and monetary policy effectiveness when nominal interest rates are bounded at zero for the European Central Bank. The paper employed stochastic simulations of a small structural rational expectations model to investigate the consequences of the zero bound on nominal interest rates. We findthat if the economy is subject to stochastic shocks similar in magnitude to those experienced in the U.S. over the 1980s and 1990s, theconsequences of the zero bound are negligible for target inflation rates as low as 2 percent. However, the effect of the constraint are non linearwith respect to the inflation target and produce a quantitatively significant deterioration of the performance of the economy with targets between 0 and 1percent. The variability of output increases significantly and that of inflation also rises somewhat. Also, the paper showed that the asymmetry of the policy ineffectiveness induced by the zero bound generates a non-vertical long-run Philips curve. Output falls increasingly short of potentialwith lower inflation targets.

Orji (2006) examined the efficacy of monetary policy in ensuring price stability using consumer price index and inflation rate as price measure in Nigeria. The analysis used data from 1980-2004 and applied the Ordinary Least Squares (OLS) techniques. The study results research reveal that only money supply and domestic credit has significant effects on consumer price index hence for monetary authority to achieve its objective of price stability, its policies should be geared towards targeting the consumer price index, which remains a viable measure for price stability in Nigeria.

Udah (2008) in his research on the monetary policy and macroeconomic management used 3SLS estimation technique as well as carried out policy simulation experiment to investigate how monetary variables interact with aggregate supply, demand and prices in order to aid stabilization policies. The results show that monetary variables and government finance is linked through the government's net indebtedness to the banking system. The simulation results show that a 20 percent monetary squeeze would reduce inflation rate faster than if the reduction in money supply were 10 percent. This reduction in moneyvectoroutput, employment and government expenditure, which may hurt the domestic economy. Thus, thus study concludes that there is trade-offbetween high GDP growth and inflation in Nigeria.

Chukwu (2009) carried out a controlled experiment using a structural vector autoregressive (SVAR) model to trace the effects of monetary policy shocks on output and prices within the same period. This places a recursive restriction on the disturbances of the SVAR. They conducted the experiment using three alternative policy instruments i.e. broad money (M2), Minimum Rediscount Rate (MRR), and a very Real Effective Exchange Rate (REER). Overall, they found evidence that monetary policy innovations carried out on the quantity-based nominal anchor (M2) has modest effects on output and prices within the same period. This alternative policy instruments i.e. broad money (M2), Minimum Rediscount Rate (MRR) and the real effective exchange rate (REER). Overall, they found evidence that monetary policy innovations carried out on the quantity-basedquantity, nominalanchors (MRR and REER) haveneutral and fleeting effects on output. They concluded that the manipulation of the quantity of money (M2) in the economy is the most influential instrument for monetary policyimplementation. Hence, they recommended that central bankers should place more emphasis on the use of the quantity-based nominalachor rather than the price-based nominalachors.

Bakare (2011) examined the determinants of money supply growth and its implications on inflation in Nigeria. The study quasi-experimental research design approach for the data analysis.This design combined theoretical consideration (a priori criteria) with empirical observations and extracted maximum information from the available data. The Nigeria's secondary data were processed using E-view for windows econometric packages. The results of the regression showed that credit expansion to the private sector determines money supply growth by the highest magnitudein Nigeria. The results also showed a positive relationship between

money supply growth and inflation in Nigeria. It demonstrated that a one (1) percent rise in money supply in the current period leads to 5.6 percent rise in inflation. All in all, our findings discovered that changes in money supply are concomitant to inflation in Nigeria and strongly support the need for regulatingmoney supply growth in the economy. This affirms the usual argument of the Monetarist school of thought that says "money matters."

Adesoye, Maku and Atanda (2011), in their empirical analysis of the determinants of real inflation rate is examined in Nigeria between 1980 and 2008 by adopting the Mackinnon model. The incorporated factors-real output, real investment, nominal interest rate, and consumer price index-as determinants of monetary balance are decomposed and regressed pair-wise to formulate three variants of the McKinnon model, the times series properties of the incorporated variables are examined using the Augumented Dickey-Fuller unit root test. The error correction mechanism (ECM) model is employed to re-structuralize the long-run relationship which is determined using the Engle-Granger co-integration test among rate are the significant factors incorporated in the McKinnon models. In the long-run, real output and nominal interest rate are the significant factors that determine monetary balances and dictate the extent of financial repression in Nigeria during a time horizon independently. It is the short-run, thus strengthen the argument of McKinnon that inflation results as a consequence of financial repression such that the underlying value of currency and monetary balance are distorted.

Amassoma (2011) appraised monetary policy development in Nigeria and also examined the effect of monetary policy on macroeconomic variables in Nigeria for the period 1986 to 2009. The study adopted a simplified Ordinary Least Squares technique and also conducted the unit root and co-integration tests. The findings of the study showed that monetary policy have witnessed the implementation of various policy initiatives and has therefore experienced sustained improvement over the years. The result also shows that monetary policy had a significant effect on exchange rate and money supply while monetary policy was observed to have an insignificant influence on price instability within the Nigeria economy. The study concluded that for monetary policy to achieve its other macroeconomic objective such as economic growth there is the need to reduce the excessive expenditure of the government and align fiscal policy along with monetary policy measures.

Adigwe et al (2015) examined monetary policy and its impact on economic growth in Nigeria. Using OLS method to analyse data between 1980 and 2010, they recommended that monetary policy should facilitate a favourable investment climate through appropriate interest rate, exchange rate and liquidity management mechanism and the money market should provide more financial instruments that satisfy the requirements of the ever-green sophistication of operators.

III. RESEARCH METHODOLOGY

In specifying the model for this study, this paper adopts the model specified by Adigwe et al (2015). The Keynesian Quantity theory of money is the theoretical framework for this study given its closeness as well as its functional relationship with this study. In line with objectives of this paper, the models for this study is specified thus:

Y = f (RGDP, LRATIO, M2, INT, INFL, EXR) ……………………………….(1)

The analysis for the study used annual time series data ranging from 1981 to 2018, and the data were sourced from the central Bank of Nigeria Statistical Bulletin. The variables were primarily tested for normality using descriptive statistics, for stationarity using the Augumented Dickey Fuller (ADF) test for the presence or absence of unit roots in the time series of the variables, while the Johansen cointegration test is used to test where the Granger causality test seek to examine joint causal relationship between the variables. The VAR (vector auto regression was used to examine interrelationship among the variables. This study therefore proceed to present the reduced form of the VAR model:

$$V_t \quad = \quad \delta_{it} + \sum_{i=1}^{k} B_{ij}V_{t-j} + e_{it} \quad ……………………(2)$$

Where V_t = Vector of variables [RGDP. M2, LRATIO, INTR, INFL, EXR]

V_{t-1} = Vector of Lagged variables

δ_{it} = Vector of intercept terms

B_{ij} = Matrix of Coefficients

RGDP = Real gross domestic product used as proxy for economic growth (output/productivity)

M2 = Broad money supply

LRATIO = Liquidity ratio

INTR = Interest rate

INFL = Inflation

EXR = Exchange rate

IV. Presentation Of Results
4.0 Empirical Results and Interpretation
The results of the study is presented in this section.

Descriptive Statistics
Table 1: Summary of Descriptive Statistic
DESCRIPTIVE STATISTICS

	RGDP	M2	LRATIO	INTR	INFL	EXR
Mean	931.5872	3219.526	50.47243	7.439043	25.19496	82.78627
Median	444.649	393.0788	45.95	5.33	20.09029	92.69335
Maximum	3080.317	41664.54	196.2052	18.8	65.71668	305.7901
Minimum	153.076	9.9153	29.1	1.410541	-4.976077	0.610025
Std. Dev.	921.5633	7176.113	26.40035	5.089927	20.3996	80.40635
Skewness	1.199187	4.351712	4.68687	0.76397	0.500841	0.713608
Kurtosis	2.915807	23.60272	26.5635	2.20574	2.084935	2.868118
Jarque-Bera	8.878904	771.1753	991.4547	4.57174	2.837761	3.167107
Probability	0.011802	0	0	0.101686	0.241985	0.205245
Sum	34468.73	119122.5	1867.48	275.2446	932.2134	3063.092
Sum Sq. Dev.	30574043	1.85E+09	25091.23	932.6647	14981.17	232746.5
Observations	37	37	37	37	37	37

Source: Author's computation 2020.

The results of the descriptive statistic of RGDP, M2, LRATIO, INTR, INFL, EXR are presented in table 1 abov3. Normality test uses the null hypotheses against the alternative hypotheses of non normality. If the probability value is less than the JarqueBera Chi-square at 5% level of significance, the null hypothesis of the regression is rejected. Given the results in table 1 above, it is apparent that the hypothesis that all the variables are normally distributed cannot be rejected since all the probability are less than the JarqueBera Chi-square distribution. We utilize the mean base coefficient of Skwenessand kurtosis to check the normality of all the variables used Skwenessmeasures the direction and degree of asymmetry. The skweness coefficient indicates normal curve for all variables with values ranging between +2 and -2 only M2 and LRATIO falls beyond the +2 and -2 range are positivelyskwed. The distribution ofplatykurtic, except for M2 and LRATIO thatare leptokurtic (Kurtosis > 3). However, those results suggests that the use of a VAR model is justified since the hypothesis that the error vector is Gaussian white noise cannot be rejected.

Table 2: Correlation Matrix
CORRELATION MATRIX

	RGDP	M2	LRATIO	INTR	INFL	EXR
RGDP	1	0.578606	0.1774209	-0.637426	0.7053257	0.7538186
M2	0.578606	1	0.8303278	-0.361208	0.3719126	0.7484588
LRATIO	0.1774209	0.8303278	1	-0.179281	-0.035894	0.4634596
INTR	-0.637426	-0.361208	-0.179281	1	-0.157526	-0.717564
INFL	0.7053257	0.3719126	-0.035894	-0.157526	1	0.3579444
EXR	0.7538186	0.7484588	0.4634596	-0.717564	0.3579444	1

Source: Author's computation, 2020.
An examination of the correlation matrix presented in the table above shows that there is a correlation between monetary policy co-operant factors M2 LRATIO, INFL, EXR and economic growth RGDP.

Table 3

Variables	ADF test statistics	95% critical value	Order of integration	Status
RGDP	-0.365	-2.945	-	Non-stationary
M2	3.197	-2.976	-	Non-stationary
LRATIO	-1.257	-2.945	-	Non-stationary
INTR	-1.013	-2.945	-	Non-stationary
INFL	-2.162	-2.948	-	Non-stationary
EXR	-3.303	-2.948	I(0)	Stationary

Source: Author's computation, 2020
The results of the ADF unit root tests presented above in table 3a show that all the variables except EXR (which is stationary in levels) were non stationary. The variables RGDP, M2, LRATIO, INTR, INFL were further subjected to differencing. The results are presented in table 3b below:

Table 3b: Results of Unit Root Test

Variables	ADF test statistics	95% critical value	Order of integration	Status
RGDP	-5.319	-2.948	i(1)	Stationary
M2	11.451	-2.976	i(1)	Stationary
LRATIO	-3.033	-2.954	i(1)	Stationary
INTR	-6.097	-2.948	i(1)	Stationary
INFL	-3.880	-2.948	i(1)	Stationary

Source: Author's computation

The results in table 3b show all the variables are difference stationary and integrated of order 1 [i(1)] at 5% level of significance.

Johansen Co-integration Test results

The results of the multivariate cointegration test based on the Johensen's co-integration technique reveal that both trace statistic and maximum Eigen value statistic confirm the existence of four co-integrating equations. Technically, the evidence of the co-integrating equations shows that there is a long run relationship between the variables and they are likely to converge at equilibrium level in the long run. The results are presented in table 4 below:

Table 4: Johansen co-integration test results

Date: 11/30/19   Time: 22:28
Sample (adjusted): 1984 2017
Included observations: 34 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDP M2 LRATIO INTR INFL EXR
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.856829	189.3166	95.75366	0.0000
At most 1 *	0.731686	123.2302	69.81889	0.0000
At most 2 *	0.650761	78.49992	47.85613	0.0000
At most 3 *	0.603719	42.73196	29.79707	0.0010
At most 4	0.278051	11.26047	15.49471	0.1960
At most 5	0.005375	0.183236	3.841466	0.6686

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 No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.856829	66.08641	40.07757	0.0000
At most 1 *	0.731686	44.73032	33.87687	0.0018
At most 2 *	0.650761	35.76795	27.58434	0.0036
At most 3 *	0.603719	31.47149	21.13162	0.0013
At most 4	0.278051	11.07724	14.26460	0.1504
At most 5	0.005375	0.183236	3.841466	0.6686

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

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

RGDP	M2	LRATIO	INTR	INFL	EXR
0.005097	-0.003236	-0.036208	-0.055287	0.076981	0.019618
-0.008737	0.003371	-0.114110	-0.156568	-0.071190	-0.007970
-0.000776	-0.000480	-0.234761	-0.274078	0.056311	0.011396
-0.007037	0.001889	0.104708	0.194528	0.071051	0.022196
0.005265	-0.000873	-0.071477	0.470421	-0.110831	0.006944
0.003863	-0.001588	-0.106642	0.074059	-0.035434	0.040362

Source: Author's Computation.

Vector Auto Regression (VAR) Estimation

In order to assess the relationship between monetary policy and economic growth, it is necessary to estimate the VAR model. In this study, the Akaike Information Criterion (AIC) was used to determine the lag length of the VAR model. However, two lag lengths were adopted for this study. The VAR estimates are presented in table 5 below:

Table 5: VAR Estimates

Vector Autoregression Estimates
Date: 11/30/19   Time: 22:29
Sample (adjusted): 1983 2017
Included observations: 35 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	RGDP	INTR	EXR	INFL	LRATIO	M2
RGDP(-1)	0.338409	0.000967	-0.007909	0.003888	-0.044252	-7.582194
	(0.17954)	(0.00187)	(0.01646)	(0.00805)	(0.01981)	(3.15665)
	[1.88487]	[0.51739]	[-0.48046]	[0.48314]	[-2.23381]	[-2.40197]
RGDP(-2)	-0.195780	0.001460	0.009291	-0.004413	-0.005144	-1.542049
	(0.17015)	(0.00177)	(0.01560)	(0.00763)	(0.01877)	(2.99149)
	[-1.15066]	[0.82459]	[0.59557]	[-0.57868]	[-0.27399]	[-0.51548]
INTR(-1)	-11.68457	0.761385	-0.117049	0.246497	1.986430	286.1803
	(17.6909)	(0.18415)	(1.62202)	(0.79295)	(1.95198)	(311.040)
	[-0.66048]	[4.13458]	[-0.07216]	[0.31086]	[1.01765]	[0.92008]
INTR(-2)	-19.96481	0.129478	-0.212745	0.773213	-3.062003	-134.8547
	(19.7833)	(0.20593)	(1.81386)	(0.88674)	(2.18286)	(347.828)
	[-1.00917]	[0.62875]	[-0.11729]	[0.87198]	[-1.40275]	[-0.38770]
EXR(-1)	-3.164078	-0.003602	1.080301	-0.098796	0.252966	27.14773
	(2.63850)	(0.02746)	(0.24191)	(0.11826)	(0.29113)	(46.3898)
	[-1.19920]	[-0.13114]	[4.46564]	[-0.83539]	[0.86892]	[0.58521]
EXR(-2)	3.156043	-0.025771	-0.158334	0.076627	-0.309710	-34.10357
	(2.68193)	(0.02792)	(0.24590)	(0.12021)	(0.29592)	(47.1534)
	[1.17678]	[-0.92313]	[-0.64391]	[0.63744]	[-1.04660]	[-0.72325]
INFL(-1)	9.826396	0.040094	-0.827322	1.043645	-0.228446	-43.05310
	(4.59192)	(0.04780)	(0.42102)	(0.20582)	(0.50666)	(80.7346)
	[2.13993]	[0.83881]	[-1.96506]	[5.07066]	[-0.45088]	[-0.53327]
INFL(-2)	-7.956068	-0.081287	0.510127	-0.649555	0.720903	83.31537
	(4.10867)	(0.04277)	(0.37671)	(0.18416)	(0.45334)	(72.2381)
	[-1.93641]	[-1.90064]	[1.35417]	[-3.52713]	[1.59020]	[1.15334]
LRATIO(-1)	2.038671	-0.015624	-0.554486	0.187498	0.437284	27.16055
	(4.19237)	(0.04364)	(0.38438)	(0.18791)	(0.46258)	(73.7098)

	[0.48628]	[-0.35802]	[-1.44253]	[0.99780]	[0.94532]	[0.36848]
LRATIO(-2)	-6.339396	0.063839	0.028553	-0.425846	0.197607	73.09051
	(4.38146)	(0.04561)	(0.40172)	(0.19639)	(0.48344)	(77.0343)
	[-1.44687]	[1.39973]	[0.07108]	[-2.16840]	[0.40875]	[0.94881]
M2(-1)	-0.198285	0.000548	0.005956	0.001539	0.019294	5.072035
	(0.08037)	(0.00084)	(0.00737)	(0.00360)	(0.00887)	(1.41302)
	[-2.46722]	[0.65483]	[0.80823]	[0.42721]	[2.17583]	[3.58951]
M2(-2)	0.465792	-0.000656	-0.001810	0.003300	-0.005133	-0.631438
	(0.11515)	(0.00120)	(0.01056)	(0.00516)	(0.01271)	(2.02463)
	[4.04494]	[-0.54696]	[-0.17143]	[0.63939]	[-0.40401]	[-0.31188]
C	778.8140	-0.509066	38.22420	11.33308	31.54709	-4917.724
	(322.954)	(3.36173)	(29.6105)	(14.4756)	(35.6341)	(5678.14)
	[2.41153]	[-0.15143]	[1.29090]	[0.78291]	[0.88531]	[-0.86608]
R-squared	0.977238	0.919212	0.973305	0.906892	0.659882	0.882937
Adj. R-squared	0.964822	0.875145	0.958744	0.856106	0.474363	0.819085
Sum sq. resids	693805.1	75.17651	5832.383	1393.882	8446.722	2.14E+08
S.E. equation	177.5855	1.848544	16.28215	7.959791	19.59444	3122.286
F-statistic	78.71024	20.85969	66.84293	17.85715	3.556952	13.82777
Log likelihood	-222.8183	-63.04144	-139.1899	-114.1416	-145.6711	-323.1587
Akaike AIC	13.47533	4.345225	8.696567	7.265234	9.066920	19.20907
Schwarz SC	14.05303	4.922926	9.274268	7.842935	9.644621	19.78677
Mean dependent	942.8853	7.478417	87.48026	25.20545	51.09942	3402.922
S.D. dependent	946.8343	5.231510	80.16156	20.98365	27.02650	7340.659

Determinant resid covariance (dof adj.)	3.33E+17
Determinant resid covariance	2.06E+16
Log likelihood	-955.3076
Akaike information criterion	59.04615
Schwarz criterion	62.51235
Number of coefficients	78

Source: Author's Computation.

The results presented above shows that all the variables put together account for about 88.6% of the systematic change in the monetary policy measures and its influence on economic growth. Their F-Statistic in general terms are significant across lag. The impact on RGDP is statistically non-significant across lags and have no significant impact on growth. M2 (money supply) has a positive and significant relationship with growth (RGDP) in lag 2 and as such exerts a significant positive impact on growth. The impact of INTR on RGDP is negative and insignificant across lags. Therefore the M2 has a direct relationship with economic growth RGDP suggesting that it encourages investment and productivity. Liquidity ratio LRATIO and interest rates INTR has an insignificant relationship with growth hence little reliance can be built on the result. From the results of this study, it can inferred that the expected transformation of the economy through the monetary policy instrument of liquidity ratio and interest rate for the periods under review were not realized. Thus we reject the hypothesis that monetary policy (money supply) co-operant factors do not have significant impact on economic growth in Nigeria. This finding is in line with the findings of Adigwe et al (2015).

From the results of this study, it can be stated that INTR, EXR, M2, LRATIO have non significant influence on inflation in Nigeria. Theapplication of the aforementioned variables by the monetary authorities in an attempt to control inflation have always produced a non significant effect. This however is as a result of the under developed and inefficient financial and credit market in Nigeria,Chukwu (2009).

Forecast Error Variance Decomposition Test
FORECAST ERROR VARIANCE DECOMPOSITION TEST

Variance Decomposition of RGDP: 6a Period	S.E.	RGDP	INTR	EXR	INFL	LRATIO	M2
1	177.5855	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	682.2485	25.19128	3.567558	1.783617	25.25534	32.93622	11.26598
3	2231.081	20.46532	5.729518	2.558435	22.64789	38.59982	9.999016
4	10937.60	17.34181	4.529947	3.554610	21.14641	42.48261	10.94461
5	56968.35	16.92371	4.284033	3.723214	21.04407	42.78821	11.23676
6	301334.3	16.87848	4.216434	3.744643	21.05708	42.78097	11.32239
7	1598228.	16.87199	4.204537	3.745241	21.06836	42.77241	11.33747
8	8480046.	16.87216	4.202763	3.744431	21.07136	42.76953	11.33976
9	44997129	16.87239	4.202446	3.744126	21.07201	42.76890	11.34013
10	2.39E+08	16.87247	4.202388	3.744045	21.07214	42.76877	11.34019

Variance Decomposition of INTR 6b: Period	S.E.	RGDP	INTR	EXR	INFL	LRATIO	M2
1	1.848544	0.000834	99.99917	0.000000	0.000000	0.000000	0.000000
2	2.712874	0.622142	78.59858	2.002939	1.623918	11.71383	5.438590
3	8.805689	7.063775	19.91352	6.161890	18.06289	40.78918	8.008745
4	43.97164	14.59771	6.227140	4.521010	21.03380	43.03122	10.58911
5	233.0890	16.38967	4.438075	3.939837	21.09361	42.90792	11.23089
6	1236.715	16.77655	4.233433	3.789062	21.07291	42.81214	11.31590
7	6562.676	16.85573	4.206303	3.753324	21.06993	42.77918	11.33554
8	34824.11	16.86968	4.202759	3.745837	21.07130	42.77094	11.33949
9	184787.5	16.87203	4.202403	3.744363	21.07195	42.76915	11.34010
10	980536.2	16.87242	4.202376	3.744084	21.07212	42.76881	11.34019

Variance Decomposition of EXR 6c: Period	S.E.	RGDP	INTR	EXR	INFL	LRATIO	M2
1	16.28215	37.03052	0.088145	62.88134	0.000000	0.000000	0.000000
2	29.10249	43.00747	0.055482	36.95155	12.32284	2.077278	5.585383
3	79.21438	28.86510	1.591229	4.998637	26.20106	24.97405	13.36992
4	372.8931	19.10612	3.659967	2.531283	22.94656	39.91847	11.83760
5	1960.554	17.27733	4.116444	3.438935	21.38210	42.39822	11.38697
6	10395.28	16.95183	4.182831	3.683416	21.11450	42.71729	11.35013
7	55161.00	16.88760	4.197285	3.732871	21.07817	42.76056	11.34352
8	292711.5	16.87530	4.201195	3.741997	21.07318	42.76720	11.34112
9	1553233.	16.87302	4.202127	3.743644	21.07237	42.76842	11.34042
10	8241932.	16.87259	4.202325	3.743949	21.07221	42.76867	11.34025

Variance Decomposition of INFL 6d: Period	S.E.	RGDP	INTR	EXR	INFL	LRATIO	M2
1	7.959791	2.273389	4.361498	0.062800	93.30231	0.000000	0.000000
2	11.58423	1.209584	2.417002	8.387075	57.38013	28.25241	2.353798
3	47.74438	12.82488	5.106068	6.265638	17.17707	45.13792	13.48843

4	282.2913	15.96127	4.280602	4.171689	20.83786	42.53529	12.21329
5	1529.882	16.64016	4.243058	3.817649	21.18994	42.64715	11.46204
6	8142.860	16.82911	4.216439	3.753712	21.10941	42.74293	11.34839
7	43224.10	16.86545	4.204998	3.745081	21.07931	42.76534	11.33981
8	229366.1	16.87146	4.202697	3.744152	21.07323	42.76853	11.33993
9	1217085.	16.87236	4.202384	3.744045	21.07229	42.76878	11.34015
10	6458207.	16.87248	4.202365	3.744027	21.07217	42.76876	11.34020

Variance Decomposition of LRATIO: 6e							
Period	S.E.	RGDP	INTR	EXR	INFL	LRATIO	M2
1	19.59444	6.607971	9.175638	4.295492	18.64682	61.27408	0.000000
2	75.76857	18.59217	5.471137	2.923388	20.38451	43.97991	8.648888
3	387.6657	17.31263	3.836247	3.657445	20.90816	42.78602	11.49950
4	2046.656	16.91056	4.132660	3.750074	21.05334	42.80568	11.34768
5	10855.80	16.88578	4.194335	3.743571	21.06281	42.77366	11.33983
6	57604.51	16.87528	4.201003	3.743560	21.07011	42.76912	11.34092
7	305664.3	16.87297	4.202224	3.743896	21.07192	42.76865	11.34035
8	1621941.	16.87257	4.202368	3.743993	21.07215	42.76870	11.34022
9	8606485.	16.87250	4.202376	3.744016	21.07217	42.76873	11.34020
10	45668475	16.87249	4.202374	3.744021	21.07217	42.76874	11.34020

Variance Decomposition of M2: 6f							
Period	S.E.	RGDP	INTR	EXR	INFL	LRATIO	M2
1	3122.286	10.42249	2.852304	5.276198	21.12633	46.64130	13.68138
2	17398.22	16.13270	3.963217	3.963799	20.98502	43.17942	11.77584
3	95029.99	16.75072	4.107895	3.781230	21.07665	42.82196	11.46155
4	506640.2	16.85592	4.183951	3.746069	21.08649	42.76313	11.36445
5	2690585.	16.87170	4.198719	3.743126	21.07666	42.76485	11.34495
6	14279017	16.87265	4.201674	3.743610	21.07329	42.76775	11.34103
7	75770108	16.87260	4.202248	3.743897	21.07240	42.76852	11.34033
8	4.02E+08	16.87252	4.202349	3.743991	21.07221	42.76870	11.34022
9	2.13E+09	16.87250	4.202368	3.744015	21.07217	42.76874	11.34021
10	1.13E+10	16.87249	4.202372	3.744021	21.07217	42.76874	11.34020

Cholesky Ordering: RGDP INTR EXR INFL LRATIO M2

The forecast error variance decomposition shows the proposition of forecast error variance for each variable that is attributable to its own innovation and to innovations in the other endogenous variables. An examination of the variance decomposition of RGDP in table 6a shows that the lion's share of the variation in RGDP is attributed to its own shock. The contribution of "own shock" is 100% in the first period and falls to 16.87% at the end of the 10 period horizon. The contribution of the other five (5) variables are quite marginal. The highlight is by LRATIO whose contribution is 42.76% in the tenth period in 6b, the contribution of "own shock" is 99.99% in the first period and falls to 4.20% in the tenth period. The contribution of the other five (5) variables is marginal with LRATIO accounting for 42.76%. In 6c, the case of EXR, an examination of the variance decomposition shows that 62.88% of the variation is attributed to own shock in the first period and falls to 3.74% in the tenth period. The contribution of the other five (5) variables are RGDP 16.87%, INTR 4.20%,

INFL, 21.07%, LRATIO 42.76% and M2 11.34%. In 6d, an examination of the variance decomposition shows that 93.30% of the variation in INFL is attributed to own shock in the first period and falls to 21.07% in the tenth period. The contribution of the other five (5) variables are RGDP 16.87% INTR 4.20% EXR 3.74%, LRATIO 42.76% and M2 11.34%. In the case of 6e, LRATIO, an examination of the variance decomposition shows that 61.27% of the variation is attributed to own shock in the first period and falls to 42.76% in the tenth period. The contribution of the other five (5) variables are quite marginal. RGDP 16.87%, INTR 4.20%, EXR 3.74%, INFL 21.07% andM2 11.34%. Finally, in the case of 6f M2, an examination of the variance decomposition shows that 13.68% of the variation in M2 is attributed to own shock in the first period and falls to 11.34% in the tenth period. The contribution of the other five (5) variables are marginal. The researcher however concludes that the predominant sources of variation in RGDP are largely due to own shocks and innovations in LRATIO. The predominant sources of variation in INTR are due to own shocks and innovations in LRATIO and INFL, the predominant sources of variation in EXR are largely due to own variation in INFL are due to shocks and innovations in LRATIO, the predominant sources of variation in LRATIO are largely due to own shocks and innovation INFL, while the predominant sources of variation in M2 are largely due to own shocks and innovations in LRATIO. Clearly the predominance of LRATIO variation on RGDP is an indication of the positive relationship existing between them.

VAR, Granger Causuality Test

Table 7: VAR, Granger Causuality/Block Exogeneity Wald Tests

VAR Granger Causality/Block Exogeneity Wald Tests
Date: 11/30/19   Time: 22:36
Sample: 1981 2017
Included observations: 35

Dependent variable: RGDP

Excluded	Chi-sq	df	Prob.
INTR	6.616473	2	0.0366
EXR	1.502907	2	0.4717
INFL	5.133378	2	0.0768
LRATIO	2.129784	2	0.3448
M2	18.23153	2	0.0001
All	55.51366	10	0.0000

Dependent variable: INTR

Excluded	Chi-sq	df	Prob.
RGDP	1.684686	2	0.4307
EXR	4.827179	2	0.0895
INFL	3.844182	2	0.1463
LRATIO	1.964092	2	0.3745
M2	0.429677	2	0.8067
All	13.03184	10	0.2219

Dependent variable: EXR

Excluded	Chi-sq	df	Prob.
RGDP	0.410036	2	0.8146
INTR	0.085317	2	0.9582
INFL	3.879337	2	0.1438
LRATIO	2.135116	2	0.3438
M2	1.325617	2	0.5154

	All	12.93347	10	0.2274

Dependent variable: INFL

Excluded	Chi-sq	df	Prob.
RGDP	0.395816	2	0.8204
INTR	3.391630	2	0.1834
EXR	0.740993	2	0.6904
LRATIO	5.016377	2	0.0814
M2	2.987075	2	0.2246
All	17.96679	10	0.0555

Dependent variable: LRATIO

Excluded	Chi-sq	df	Prob.
RGDP	7.089889	2	0.0289
INTR	1.988191	2	0.3701
EXR	1.107850	2	0.5747
INFL	3.058959	2	0.2166
M2	10.04846	2	0.0066
All	40.24648	10	0.0000

Dependent variable: M2

Excluded	Chi-sq	df	Prob.
RGDP	9.031971	2	0.0109
INTR	1.147417	2	0.5634
EXR	0.535048	2	0.7653
INFL	1.398153	2	0.4970
LRATIO	1.233827	2	0.5396
All	23.10070	10	0.0104

The results presented in the table shows that there is no joint causality between RGDP, INTR, EXR and INFL given their probability values. LRATIO and M2 cannot be excluded from RGDP as the results of this study has shown. The overall RGDP, LRATIO and M2 equations are significant at 5% level of significance.

Impulse Response functions (IRFs)
To further examine the dynamic analysis of monetary policy and economic growth within the framework, the IRFs helps to examine the dynamic interactions of the variables in the VAR. The results of the estimated impulse response function are summarized below.These visual representation and the accompanying figure are shown below:

IMPULSE RESPONSE TEST

Response of RGDP:

Period	RGDP	INTR	EXR	INFL	LRATIO	M2
1	177.5855	0.000000	0.000000	0.000000	0.000000	0.000000
2	292.7790	-128.8630	91.11575	342.8619	-391.5430	-228.9956
3	949.4476	-518.2604	345.0358	1004.886	-1329.694	-667.2963
4	4441.565	-2265.839	2031.026	4916.334	-6992.927	-3549.004
5	22989.01	-11559.17	10797.25	25644.98	-36576.26	-18750.57
6	121559.9	-60741.98	57265.97	135784.2	-193539.4	-99580.71
7	644701.9	-321821.7	303752.6	720441.2	-1026500.	-528503.1
8	3420819.	-1707296.	1611521.	3822893.	-5446423.	-2804453.
9	18151841	-9059051.	8550802.	20285490	-28899889	-14881324
10	96318975	-48069599	45372521	1.08E+08	-1.53E+08	-78964651

Response of INTR:

Period	RGDP	INTR	EXR	INFL	LRATIO	M2
1	0.005339	1.848536	0.000000	0.000000	0.000000	0.000000
2	-0.213914	1.538676	-0.383940	-0.345710	0.928494	0.632664
3	-2.330552	3.107469	-2.151866	-3.726457	5.546701	2.410338
4	-16.63641	10.24505	-9.090436	-19.81625	28.29104	14.09010
5	-92.85653	47.86257	-45.31135	-105.1360	149.9335	76.79229
6	-497.6812	249.6749	-236.2452	-557.5322	794.6596	408.6205
7	-2646.309	1321.685	-1248.421	-2958.419	4215.406	2170.023
8	-14047.14	7011.137	-6618.909	-15699.08	22366.64	11516.68
9	-74542.68	37202.18	-35116.08	-83305.32	118682.1	61112.36
10	-395548.8	197405.2	-186330.3	-442043.9	629759.6	324280.9

Response of EXR:

Period	RGDP	INTR	EXR	INFL	LRATIO	M2
1	-9.908127	-0.483404	12.91138	0.000000	0.000000	0.000000
2	-16.31205	0.486030	12.09378	-10.21611	4.194474	6.877913
3	-38.03955	9.968873	0.835049	-39.23935	39.36379	28.13620
4	-157.3393	70.63504	-56.62216	-173.9624	232.2482	124.9846
5	-798.4572	391.3279	-358.6991	-888.8038	1254.665	649.0215
6	-4201.709	2088.497	-1961.679	-4689.867	6673.186	3439.110
7	-22260.43	11099.20	-10469.05	-24870.39	35424.99	18245.22
8	-118088.6	58922.60	-55610.81	-131962.7	187994.3	96808.68
9	-626584.8	312695.0	-295144.9	-700230.4	997576.8	513687.1
10	-3324814.	1659289.	-1566182.	-3715624.	5293460.	2725762.

Response of INFL:

Period	RGDP	INTR	EXR	INFL	LRATIO	M2
1	1.200158	-1.662339	-0.199472	7.688611	0.000000	0.000000
2	0.427567	0.692899	-3.348909	4.229201	6.157364	1.777263
3	-17.05061	10.63723	-11.47048	-17.73570	31.48043	17.44459
4	-111.4762	57.39989	-56.40500	-127.3334	181.2919	97.08294
5	-613.7996	309.6760	-293.3073	-692.3534	981.9761	508.4691
6	-3281.657	1642.087	-1549.061	-3674.355	5229.056	2693.773
7	-17433.94	8704.435	-8214.697	-19489.30	27760.65	14294.74
8	-92524.46	46178.21	-43586.51	-103404.8	147312.7	75854.72
9	-490972.4	245028.1	-231280.5	-548686.4	781685.7	402511.4
10	-2605248.	1300189.	-1227239.	-2911483.	4147849.	2135846.

Response of LRATIO:

Period	RGDP	INTR	EXR	INFL	LRATIO	M2

1	-5.036941	5.935412	-4.061058	-8.461263	15.33809	0.000000
2	-32.27976	16.69916	-12.30186	-33.14598	47.84951	22.28277
3	-157.9585	73.83225	-72.99830	-173.9296	248.5478	129.5587
4	-826.0335	409.0764	-389.3411	-922.2040	1314.817	676.7935
5	-4380.783	2183.997	-2062.681	-4892.881	6972.445	3590.051
6	-23239.40	11595.61	-10945.78	-25968.12	36997.18	19051.50
7	-123306.8	61536.70	-58083.78	-137798.7	196315.7	101089.3
8	-654294.4	326535.3	-308212.7	-731201.8	1041707.	536405.9
9	-3471867.	1732690.	-1635469.	-3879967.	5527600.	2846321.
10	-18422720	9194148.	-8678272.	-20588216	29331033	15103392

Response of M2:

Period	RGDP	INTR	EXR	INFL	LRATIO	M2
1	-1007.995	527.3156	-717.1884	-1435.109	2132.348	1154.882
2	-6915.007	3423.232	-3388.803	-7839.752	11231.93	5857.602
3	-38260.60	18946.64	-18151.39	-42893.44	61126.26	31613.49
4	-204337.5	101826.2	-96302.13	-228522.1	325421.5	167737.0
5	-1085411.	541494.3	-511232.4	-1213122.	1728030.	890010.3
6	-5760236.	2874518.	-2713279.	-6437438.	9170793.	4722497.
7	-30565870	15254142	-14398208	-34158794	48664035	25058685
8	-1.62E+08	80943863	-76402101	-1.81E+08	2.58E+08	1.33E+08
9	-8.61E+08	4.30E+08	-4.05E+08	-9.62E+08	1.37E+09	7.06E+08
10	-4.57E+09	2.28E+09	-2.15E+09	-5.10E+09	7.27E+09	3.74E+09

Cholesky Ordering: RGDP INTR EXR INFL LRATIO M2

Response to Cholesky One S.D. (d.f. adjusted) Innovations

Response of RGDP to Innovations

Response of INTR to Innovations

Response of EXR to Innovations

Response of INFL to Innovations

Response of LRATIO to Innovations

Response of M2 to Innovations

ENDOGENOUS GRAPH

RGDP

INTR

EXR

INFL

LRATIO

M2
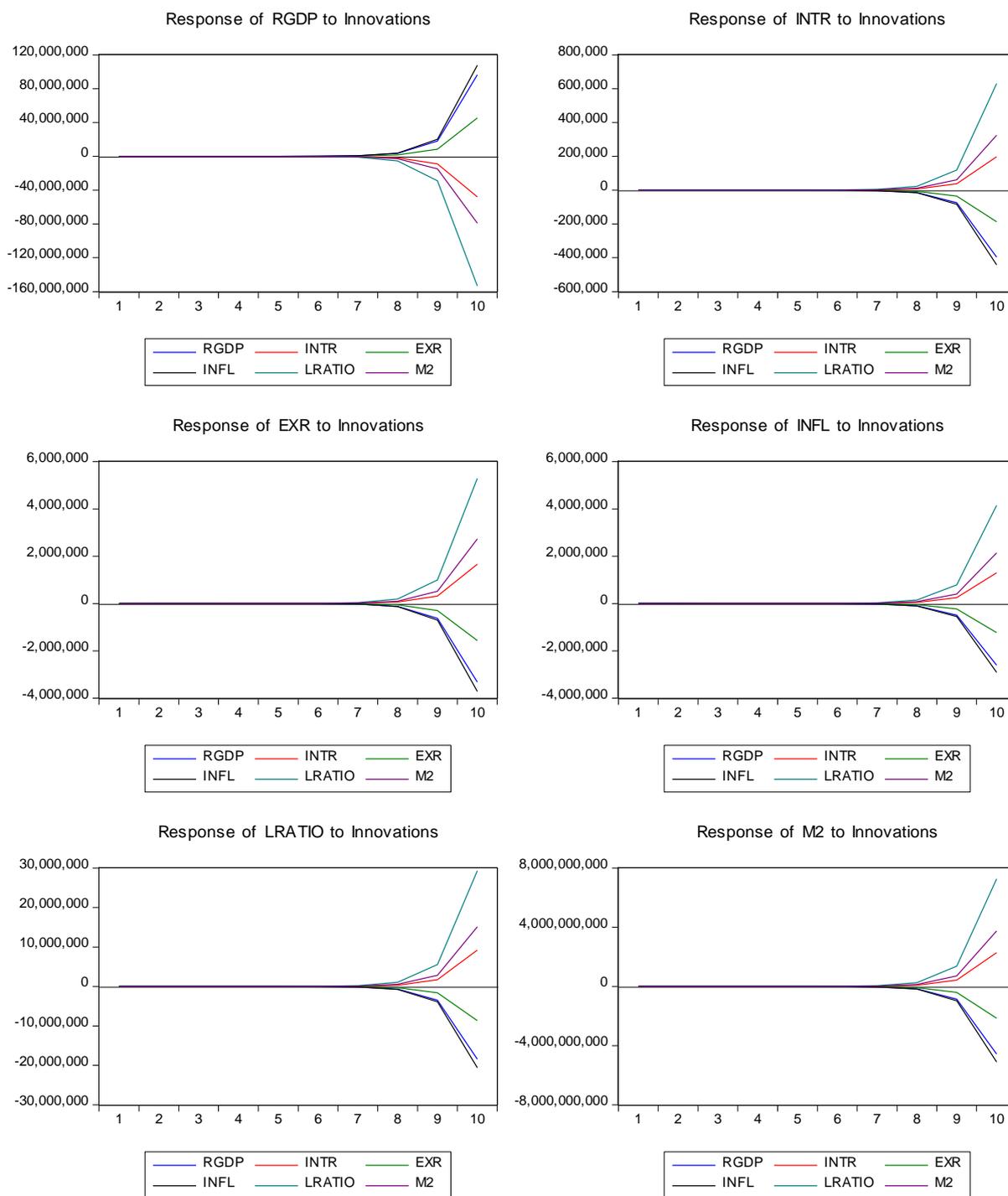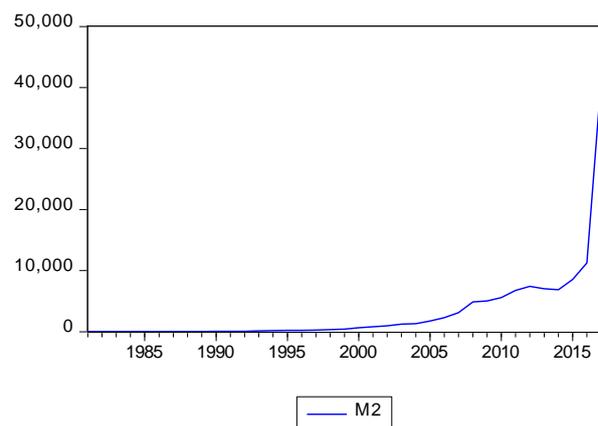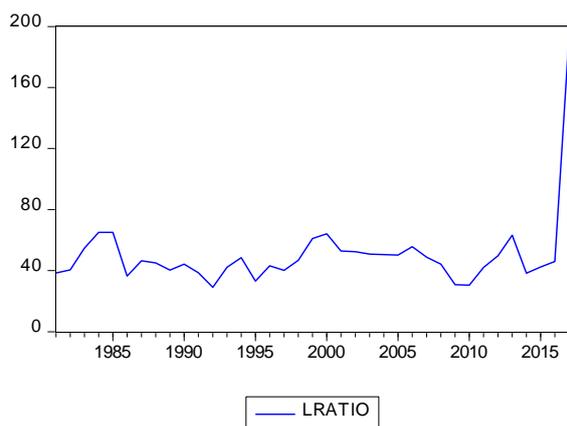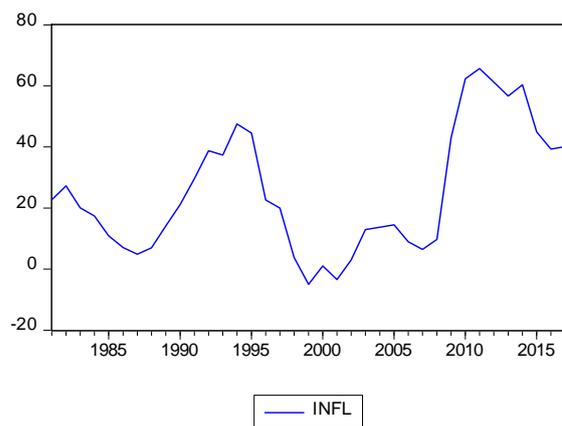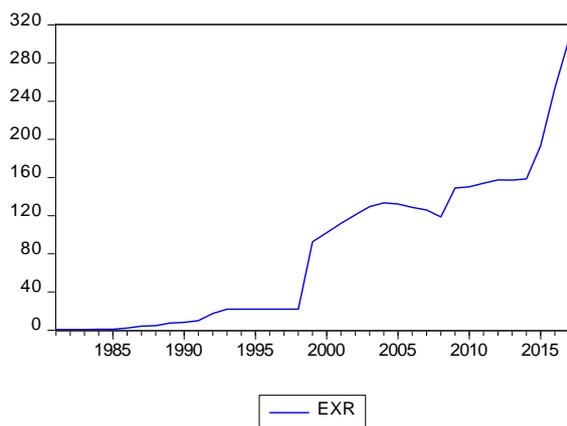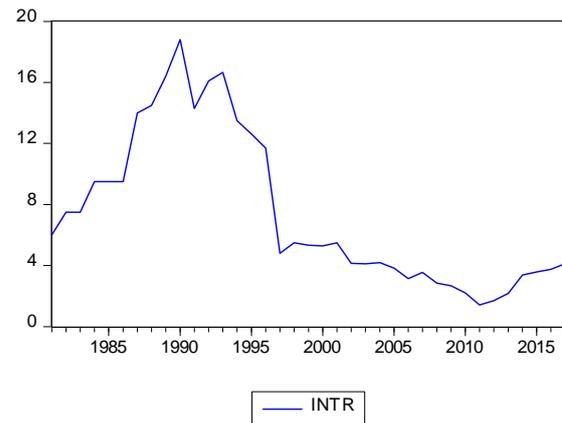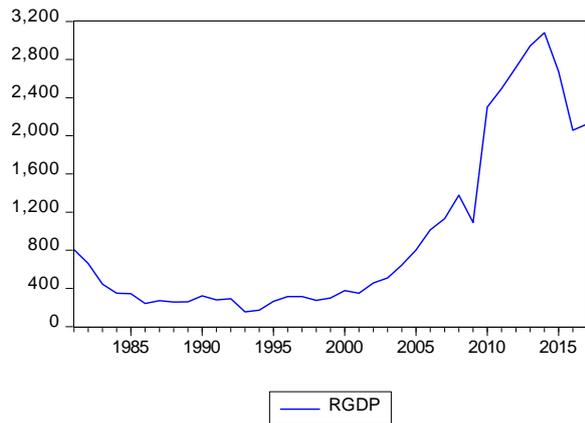
V.   Summary, Policy Recommendations And Conclusion

This paper examined the impact of monetary policy on economic growth in Nigeria from 1980-2017. Descriptive statistics and the Augumented Dickey Fuller (ADF) test were carried out to ascertain the normality and stationarity status of the variables. The results showed that the variables were normally distributed and some variables were stationary after first differencing while others became stationary after second differencing. The empirical analysis carried out using the VAR technique on the effectiveness of the Central Bank of Nigeria (CBN) monetary policies was carried out. The findings are as follows:

i.   The CBN's monetary policies plays a critical role in encouraging the level of productivity in the economy given that M2 (money supply) has a positive and significant impact of RGDP (Productivity). This finding however lends credence to the pivotal role of the central Bank of Nigeria in fostering growth and development of the country.

ii.   The various monetary policy measuresadopted by the CBN has no significant impact on inflation in Nigeria. The results show that interest rate, exchange rate, broad money supply, and liquidity ratio had no

significant impact on inflation. The author notes that inflation in Nigeria has proven not to be a monetary problem but can be attributed to the structural rigidity in the economy. This may be as a result of the fact that the economy operates below full employment such that any increase in gross domestic product GDP, does not mean improved purchasing power for citizens given the worsening poverty situation over the years.

This paper however recommends thus:

Based on the findings, the following recommendations are considered necessary.

1.   Monetary policies should be used to create a favourable investment climate by facilitating the emerging of Market based interest rate and exchange rate regimes that attract both domestic and foreign investment, create jobs, promote non oil export and revive industries currently operation for below installed capacity.

2.   Money supply to the economy should be maintained at the level that will keep encouraging economic growth and development.

3.   Low interest rate should be charged on loans to small and medium scale business enterprises in order to drive SMES and which in turn will reduce unemployment, crime and other social vices. Thus encouraging economic advancement.

4.   In terms of Policy choice exchange rate based monetary policy would be more potent in reducing inflation than interest rate based policy since exchange rate plays a very important role in the movement of price in Nigeria.

In conclusion therefore, the pivotal role of the CBN in controlling the liquidity levels in the economy for the attainment of increased output, employment and price stability cannot be overemphasized. Over the years the CBN has adopted several monetary policy measures to stabilize the economy, yet there is still inflation, unemployment, poverty etc. Nonetheless the recommendations of this paper are Germaine. If the recommendations herein are judiciously and religiously applied, the economy will improve towards the attainment of the major macroeconomic goals.

References

[1]   Adigwe, P.K., Echekoba, F.N. &Onyeagba, B.C. (2015). Monetary Policy and Economic Growth: A Critical Appraisal. *IOSR Journal of Business and Management (IOSR-JBM).* E-ISSN: 2278-487x, P-ISSN: 2319-7669. Vol. 17, Issues 2, Ver.11 (Feb 2015), pp 110-119.

[2]   Ammassoma, O.Ditimi, N., Nwosa, P. &Olaiya, S. (2011)."An Appraisal of Monetary Policy and Its Macro Economic Stabilization in Nigeria."*Journal Trends in Economics and Management Science (JETEMS),* Vol. 2(3).Pp 233-237.

[3]   Anyanwu, J.C. (1993). *Monetary Economic Theory Policy and Institutions*. Onitsha: Hybrid Publishers Ltd.

[4]   Asogu, J.O. (1991). "An Economic Analysis of the Nature and Causes of Inflation in Nigeria."*CBN Economic and Financial Review*, Vol. 29, No. 3. Pp239-254. Lagos.

[5]   Bakare, F. (2011). "An Empirical Study of the Determinant of Money Supply Growth and its Effect in Inflation rate in Nigeria." *Journal of Research in International Business and Management.* Vol. 1(5), pp. 124-129.

[6]   BCEAO (2008). Monetary Policy and Price Stability in the West African Economic and Monetary Union (WAEMU) Zone: Constraint and Challenges, *Research Centre's Fourth Symposium,* Avenue AbdoulayeFadiga, Senegal.

[7]   CBN. (1992). Monetary Policy Department: http://www.cenbank.org.l Central bank of Nigeria Statistical Bulletin http://www.cenbank.org/

[8]   Chukwu, A. (2009). Measuring the Effect of Monetary Policy Innovation in Nigeria: A Structural Auto-regressive (AVAR) Approach. *African Journal of Accounting Economics, Finance and Banking Research,* Vol. 5, No. 5, 2009, Uyo, Nigeria.

[9]   Coenen, G., Orphanides, A. & Wieland, V. (2003). "Price Stability and Monetary Policy Effectiveness when Nominal Interest rates are Bounded at Zero." *Paper No. 231, European Central Bank.*

[10]   Ibeabuchi, S.N. (2007). Overview of Monetary Policy in Nigeria.*CBN Economic and Financial Review*, Vol. 8, No. 37

[11]   Iyoha, M.A. Macroeconomics. *Theory and Policy (Revised Edition)* Benin City.Mindex Publishing Company Limited.

[12]   Jerkumba, K.M. & Mustapha, F. (1998). The Relative Effectiveness of monetary policy in promoting Economic Growth in Nigeria, Times Series Analysis. *First Bank Annual Review*, Vol. 13.

[13]   Jhingan, M.L. (2003). Advanced Economic Theory: *MacroEconomies, 12th ed.* Delhi: Vrinda Publications Ltd.

[14]   Koutsoyiannis, A. (2001). *Modern Microeconomies (2nd ed.).* Hampshire: Macmillan Press Ltd.

[15]   Miguel, K. &Liviatan, N. (1988).Inflationary Rigidities and Orthodox Stabilization Policies, lessons from Latin America.*World Bank Economic and Financial Review*, Vol. 2, pp. 1-27, New York.

[16]   Morande, F. & Schmidt, K. (2002).Monetary Policy and Inflation Targeting in Chile Mimeograph, *Central Bank of Chile.*

[17]   Odozie, V.A. (1992). "Current Monetary and Banking Policies in Nigeria and the Prospect in the Third Republic."*CBN Economic and Financial Review,* Vol. 30, No. 3, pp. 130-156, Lagos.

[18]   Odozie, V.A. (1997). "The Management of Monetary and Banking Policies by the CBN."*CBN Bulletin,Vol. 21*, No. 2. Pp. 9-26. Lagos

[19]   Omotor, D.G. (2007). Monetary Policy and Economic Growth: Theoretical and Conceptual Issues, *CBN Economic and FinancialReview*, 45(4) 39-67.

[20]   Orji, C.G. (2006). The Effect of Monetary Policy on price Stability in Nigeria. *A Research Project Submitted to the Department of Economic, Faculty of Social Sciences, NnamdiAzikiwe University, Awka, Nigeria.*

[21]   Sanusi, J. (2002). Nigeria's Macroeconomic Position: Controlling the Money Supply. Presentation at the *Meeting of the Honorary Presidential Advisory Council on Investment in Nigeria (HPACI).*London, UK.

[22]   Udah, E.B. (2008). Monetary Policy and macroeconomic Management: A Simulation Experiment. *Global Journal of Social Sciences*, Vol. 8(1) pp. 1-12, Nigeria.