Monetary Policy and Economic Growth in Nigeria: A Critical Evaluation

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Abstract: *This paper examines the impact of monetary policy on the Nigerian economy. In doing this, the Ordinary Least Square Method (OLS) is used to analyse the data between 1980 and 2010. The result of the analysis shows that monetary policy represented by money supply exerts a positive impact on GDP growth but negative impact on the rate of inflation. The recommendations are that monetary policy should facilitate a favourable investment climate through appropriate interest rates, 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.*
Keywords: *Monetary policy, inflation, economic growth, Central Bank of Nigeria, Nigeria.*

I. Introduction

Background

Monetary policy as a technique of economic management to bring about sustainable economic growth and development has been the pursuit of nations while formal articulation of how money affects economic aggregates dates back to the times of Adam Smith and latter championed by the monetary economists. Since the expositions of the role of monetary policy in influencing macroeconomic objective like economic growth, price stability, equilibrium in balance of payments, promotion of employment and a host of other objective, monetary authorities are saddled with the responsibility of using monetary policy to grow their economies. In general term, monetary policy refers to a combination of measures designed to regulate the value, supply and cost of money in an economy in consonance with the expected level of economic activities.

In Nigeria, monetary policy has been used since the Central Bank of Nigeria (CBN) was saddled the responsibility of formulating and implementing monetary policies by Central Bank Act of 1958. This role has facilitated the emergence of active money market where treasury bills, a financial instrument used for Open Market Operations and raising debt for government has grown in volume and value becoming a prominent earning asset for investors and source of balancing liquidity in the market. Another popular instrument of monetary policy (by the CBN) was the issuance of credit rationing guidelines, which primarily sets the rates of change for the components and aggregate commercial bank loans and advances to the private sector. On the other hand, the sectoral allocation of bank credit in CBN guidelines was to stimulate the productive sectors and thereby stem inflationary pressures while the fixing of interest rates at relatively low levels was done mainly to promote investment and growth.

As mentioned earlier, the objectives of monetary policy includes price stability, maintenance of balance of payments equilibrium, promotion of employment and output growth and sustainable development. These objectives are necessary for the attainment of internal and external balance and the promotion of long-run economic growth. The importance of price stability derives from harmful effects of price volatility, which undermines the ability of policy makers to achieve other laudable macro economic 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.

In Nigeria nonetheless, there has been various regimes of monetary policy. Sometimes it could be tight and at other times it is loose mostly used to stabilize prices. The economy has also witnessed times of expansion and contraction but evidently, the reported growth has not been a sustainable one as there are evidences of macroeconomic instability. The question is, could the period of economic growth be attributed to period of appropriate monetary policy? Again could the periods of economic down turn be blamed on factors other than monetary policy ineffectiveness? What measures are to be considered if monetary policy would be effective in bringing about sustainable economic growth and development? These are questions this study would attempt to answer.

The Problem

The failure of the monetary policy in curbing price instability has caused growth instability as Nigeria's record of growth and development has been very poor. An examination of the summary of the long-term pattern

reveals the following secular swings: 1965-1968 Rapid Decline (Civil War Years), 1969-1971 Revival, 1972-1980 Boom, 1981-84 crash, 1985 – 1991 Renewed Growth, 1992-2010 Wobbling, (CBN, 2010).

Moreso despite the various monetary regimes that have been adopted by the Central Bank of Nigeria over the years, inflation still remains a major threat to Nigeria's economic growth. Nigeria has experienced high volatility in inflation rates. Since the early 1970's, there has been more than three major episodes of high inflation in excess of 30 percent. The growth of money supply is correlated with this high inflation episode because money growth was often in excess of real economic growth.

Moreso, the dualistic nature of financial and product market in Nigeria constitutes a fundamental constraint militating against the formulation and efficient implementation of monetary policy. The informal sector in Nigeria accounts for about 30 percent of the GDP, thus the existence of a large informal credit market and exchange rate market in Nigeria has many implications for the transmission mechanism of monetary policy. Furthermore, the payment system is a vital link between the financial and the real sector of the economy. The payment system in Nigeria is predominantly cash and the prominence of cash for transaction purposes increases the volume of money/currency in circulation which renders monetary control difficult.

In the light of the above therefore, this study intends to subject these issues to empirical examination in order to evaluate the effect of monetary policy on economic growth in Nigeria.

Objectives of the Study
Achieving price stability and ultimately economic growth is the major objective of monetary policy. Generally, this study will dwell on the overview of monetary policy situations in the Nigerian economy. Specifically the study intends to;
i.   Ascertain the effect of monetary policy on co-operant factors in economic growth in Nigeria.
ii. Examine the effect of monetary policy on inflation in Nigeria.

Hypotheses
H_o: Monetary policy co-operant factors do not have significant impact on economic growth in Nigeria.
H_1: Monetary policy co-operant factors have significant impact on economic growth in Nigeria.
H_o: Monetary policy does not have a significant effect on inflation in Nigeria.
H_1: Monetary policy has a significant effect on inflation in Nigeria.

Section Two: Review Of Empirical Literature
The extent to which monetary policies influence 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 views of researchers on this monetary influence.

Migeul and Liviantan (1988) examined the effectiveness of adopting stabilization measures in managing inflation for selected Latin American countries. Their findings failed to show any relationship between money supply and inflation. Therefore, they concluded that the 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 identify and assess the relative contribution 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 to 41.9 percent in the same period.

Odozi (1997) 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 that the 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 development of the money and capital market. They concluded that the effect of monetary policy on price levels is however doubtful because, of the negative impact on the macroeconomic objective during 1970; hence they attributed this negative trend to the difficulty in linking monetary policy directly 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 and the US consumer price index). The empirical evidence reveals that announcement of an explicit inflation target and adoption of a supportive monetary 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 find that if the economy is subject to stochastic shocks similar in magnitude to those experienced in the U.S over the 1980s and 1990s, the consequences of the zero bound are negligible for target inflation rates as low as 2 percent. However, the effects of the constraint are non-linear with respect to the inflation target and produce a quantitatively significant deterioration of the performance of the economy with targets between 0 and 1 percent. 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 potential with 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 money supply also leads to a reduction in output, employment and government expenditure, which may hurt the domestic economy. Thus, the study concludes that there is a trade-off between 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 in Nigeria. They made the assumption that the Central Bank cannot observe unexpected changes in 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 the 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 with a very fast speed of adjustment. While, innovations on the price-based nominal anchors (MRR and REER) have neutral 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 policy implementation. Hence, they recommended that central bankers should place more emphasis on the use of the quantity-based nominal anchor rather than the price-based nominal anchors.

Bakare (2011) examined the determinants of money supply growth and its implications on inflation in Nigeria. The study employed 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 magnitude in 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 regulating money 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 monetary balance as an indicator of financial repression resulting to low investment, high interest rate and rising 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 Augmented 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 set of determining 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 observed that price stability is the only significant factor that determines monetary balances in 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 Squared 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. The implication of this finding is that monetary policy has had a significant influence in maintaining price stability 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.

Section Three: Research Methodology
Model Specification
Following Koutsoyiannis (1973), the specification of an econometric model will be based on economic theory and any available information relating to the phenomenon being studied. On that premise, this study as mentioned in the previous chapter adopts the Keynesian Quantity theory of money considering its closeness as well as its functional relationship with the present study. In specifying our model, this study will adopt the model as specified by Folaweiwo and Osinubi (2008) with some modifications and the inclusion of Exchange rate and interest rate as some of the explanatory variables. This is to make the model more robust.

In demonstration, two multiple regression models will be used. In model1, the Liquidity ratios, Money Supply, Cash ratio are the independent variables while Gross Domestic Product (GDP) is the dependent variable. In model 2, the Liquidity ratio, Money Supply, Cash ratio, Interest Rate and Exchange rate are the independent variables while Inflation rate is the dependent variable. Our model is therefore specified thus:

Model 1: $Y = f(Lr, M_2, Cr)$ ....(1)

Model 2: $Y = f(Lr, M_2, Cr, INr, EXr)$..................... (2)
Equations (1) and (2) are explicitly transformed into their econometric form thus:

Model 1: $Y = a_0 + a_1Lr + a_2M_2 + a_3Cr + \mu_i$ .... (3)
Where;
Y = Gross Domestic Product
Lr = Liquidity ratio
M_2 = Broad Money supply
Cr = Cash reserve
$a_o...a_3$, = Parameters
μ_i = Error term

Model 2

$Y = b_o + b_1 Lr + b_2 M_2 + b_3 Cr + b_4 INr + b_5 EXr + \mu_i$ .... (4)

Where;

Y = Inflation

Lr = Liquidity ratio

M_2 = Broad Money Supply

Cr = Cash reserve

INr = Interest rate

EXr = Exchange rate

$b_o, b_1 ... b_5$ = Parameters

μ_i = Error term

     Given that we intend to standardize the variables and also interpret the resulting coefficients as elasticities, the equations above are restructured in log form as thus:-

Model 1

$LnGDP = a_0 + a_1 LnLr + a_2 LnM_2 + a_3 LnCr + \mu_i$ .... (5)

Model 2

$L_n INF = b_o + b_1 LnLr + b_2 LnM_2 + b_3 LnCr + b_4 LnINr + b_5 LnEXr + \mu_i$

Method of Data Analysis

     Data collected for this study will be analyzed using descriptive and econometric analytical methods. It is now a common practice in econometric analysis to perform some pre-test assessment on the time series data to be employed. The Unit root test is important as it allows us to examine whether a time series is stationary or not. As such to avoid the problem of spurious regression, the data series will be tested for stationarity using the Augumented Dickey-Fuller technique. This is to examine the time series characteristics of the selected variables to overcome the problem of spurious correlation often associated with non-stationary time series data.

     The econometric method of Ordinary Least Square (OLS) method will be employed because it has the advantage of Best Linear Unbiased Estimator (BLUE) property. Results based on OLS will be generated using E-views 3.0.

Evaluation of Estimates

     There is need to evaluate whether the estimated coefficients are theoretically meaningful and statistically satisfactory. Hence, for this study there is need for all results to satisfy the economic a-priori criteria, Statistical Criteria (First Order Test) and Econometric Criteria (Second Order Test).

Stage 1 – Economic a-priori criteria

     This refers to the expected signs and magnitude of the parameters of economic relationships and is determined by the principles of economic theory. It is one of the criteria used in determining whether the estimates are theoretically meaningful, Koutsoyiannis (1973). Therefore, based on economic theory, the independent variables are expected to have the following signs in relation to the dependent variables

For Model 1, the a-priori expectation of the estimate is $a_0 > 0$, $a_1 > 0$, $a_2 > 0$, $a_3 > 0$. For model 2, the a-priori expectation of the estimate is $b_o > 0$, $b_1 > 0$, $b_2 > 0$, $b_3 > 0$, $b_4 < 0$, $b_5 > 0$.

Stage 2 – Statistical Criteria (First Order Test)

This stage embraces the coefficient of determination, standard error test, f-test and t-test.

Coefficient of Determination (R^2)

     The coefficient of determination (R^2) is the measure of goodness of fit. It is used to measure the power of the explanatory variables on the dependent variable. The R^2 denotes the percentage of the variation in the dependent variable that is accounted for by the independent variables. The value of R^2 lies between 0 and 1. The closer the R^2 is to 1, the better the goodness of fit. If $R^2 = 1$, it implies that there is 100 percent explanation of the variation in the dependent variable by the independent variables. This signifies a perfect fit of the regression line. However, if $R^2 = 0$, it then indicates that the explanatory variables do not explain any changes in the dependent variable.

The Adjusted Coefficient of Determination (Adjusted R^2)

     The formula for R^2 does not take into account the loss of degrees of freedom from the introduction of additional explanatory variables in the function which in fact raises the value of R^2. To correct this defect, R^2 is

adjusted by taking into account the degrees of freedom which clearly decreases as new regressors are introduced in the function.

Standard Error Test
Sampling errors are inevitable in all estimates and so the need to apply tests of significance in order to measure the size of the error and determine the degree of confidence and the validity of the estimates. The standard error test helps to decide whether the estimates are statistically significant or not.

T-statistic
This is used to find out or test for the statistical significance of the individual regression co-efficient. When this is done, the computed or calculated ratio (t_{cal}) will be compared with the tabulated (t_{tab}) with n-k degree of freedom.

F-statistic
This is a test of the overall significance of the entire regression plane. The f-test is used to test whether or not there is a significant impact between the dependent variable and the independent variables. In the regression equation, if calculated f is greater than the tabulated f-value, then there is a significant impact between the dependent and independent variables in the regression equation. But, if the calculated f is small than the tabulated f, then there is no significant impact between the dependent and the independent variables.

Stage 3 – Econometric Criteria (Second Order Test)
This aims at investigating whether the assumptions of the OLS are met. They determine the reliability of the statistical criteria and establish whether the estimates have the desirable properties of unbiasedness and consistency.

Durbin-Watson Statistic
The Durbin-Watson (D-w) statistic is the common technique for testing the first order autocorrelation. This helps to test the validity of the assumptions of non-auto correlated disturbance. If d* [is] approximately equal to 2, we accept that there is no autocorrelation in the function. If d* = 0, there exist perfect autocorrelation. In this case, if 0 < d* <2, that is, if d* is less than two (2) but greater than zero, it denotes that there is some degree of positive autocorrelation. If d* is equal to 4(d=4), there exists a perfect negative autocorrelation, while if d* is less than four but greater than two (2<d*<4) it means that there exists some degree of negative autocorrelation.
Decision Rule
The stated hypothesis will be tested at 0.05 level of significance. The null hypothesis is to be rejected if the probability at which the t-value is significant is less than the chosen level of significant, otherwise, the alternative hypothesis will be accepted.
1. If the probability (sig) > 0.05, we will accept the null hypothesis and reject the alternative hypothesis.
2. If the probability (sig) <0.05, we will accept the alternative hypothesis and reject the null hypothesis.

Section Four: Presentation And Analysis Of Result
In this section, we shall present the empirical results of the impact of monetary policy on the Nigerian economy. The Unit root test is first conducted in order to determine whether the macroeconomic variables are stationary or otherwise, then followed by regression. Test for the stationary of the variables are presented in table 1 below.

Table 1: Unit Root Test Result

Variables	DF	ADF test (CV)	ADF test stationary	P-values	Order of integration	ADF lags
Y	5%	-2.9850	3.622099	0.0015	1(1)	1
	10%	-2.6318				
INF	5%	-2.9798	-2.934405	0.0075	1(1)	1
	10%	-2.6290				
LR	5%	-2.9850	2.94227	0.0075	1(1)	1
	10%	-2.6318				
CR	5%	-3.6219	-4.252270	0.0004	1(1)	1
	10%	-3.2474				
MS_2	1%	-3.7497	-4.229205	0.0003	1(2)	1
	5%	-2.9969				
INR	5%	-3.7343	-4.529425	0.0002	1(2)	1
	10%	-2.9907				
EXR	5%	-2.9643	-2.943315	0.0007	1(1)	1
	10%	-2.9978				

The result in table 1 above shows that none of the variables was stationary at level. This can be seen by comparing the observed values (in absolute terms) of the ADF test statistics at 1%, 5% and 10% levels of significance. The result provides some evidence that none of the variables were stationary when differenced at levels, hence there is evidence of non-stationarity. However, differencing once induced stationarity in five variables (GDP, INF, LR, CR and EXR) while money supply (M_2) and interest rate (INR) were differenced twice to attain stationarity. The table therefore revealed that some of the variables were stationary at first difference i.e. 1(1) and some were of second difference i.e. 1(2).

Presentation and Interpretation of Regression Result

In this study, mathematical relationships between the variables are established. Available data on liquidity ratio (Lr), cash ratio (Cr), Money supply (MS_2), Gross Domestic Product (GDP), Inflation rate (INFR), Exchange rate (EXR) and Interest rate (INR) were collected and used for the purpose of this analysis. Two multiple regression models were formed to capture the assumed relationship between these variables

Table 2: **Presentation of Model 1 Result (GDP)**

Variable	Coefficient	Std. Error	T-statistic	Prob.
C	-105615.6	1116194.0	-0.094621	0.9254
LQR	471.2586	23756.76	0.019837	0.9843
CASHR	28075.83	66199.74	0.575166	0.5708
MS_2	4.295952	0.157122	27.34147	0.0000

$R^2 = 0.971739$, F(3,27) = 263.6123 Adj. $R^2 = 0.968053$, DW = 1.982416

Model Estimation

GDP = -105615.6 + 471.259 (LQR) + 28075.8 (CASHR) + 4.296 (MS_2)
T   = (-0.095) (0.20)   (0.575)   (27.34)

Where the variables remain as previously defined.

The above table is the result of the static regression analysis where Gross Domestic Product (GDP) was regressed on Liquidity ratio (LQR), Cash ratio (CASHR) and Money supply (MS_2). The a-priori expectation of the estimate coefficient is $a_o>0$, $a_1>0$, $a_2 >0$, $a_3 >0$.

Analysis of results for Model 1

Considering the uncertain quality of data used in the study, the level of statistical significance chosen for testing the hypothesis is at 5% level. The regression result shows there is an existence of a linear and proportionate relationship between GDP and the explanatory variables.

The explanatory variables identified are the monetary policy variables of liquidity ratio, cash reserve and broad money supply. The sign of the co-efficient estimates are rightly signed, reflecting a positive relationship with economic growth and thus conforms to a-priori expectation. The statistical evidence emanating from the study of coefficient of determination, R^2 shows that the endogenous variables jointly explained over 97.2 percent of the total variation in the dependent variable (GDP). The value of the adjusted R^2 (0.96805) which is over 96.8 percent re-affirms the goodness of fit and signifies that over 97.2 percent variations did not merely result from the use of multiple variables in the model. The F-statistic (263.6) of the model estimate is statistically satisfactory. The joint influence of the explanatory variables was statistically significant at 5 percent level of significance. The Durbin Watson test of autocorrelation (1.98) indicates that there is no autocorrelation.

Specifically, at 5 percent level of significance, Liquidity ratio and Cash reserve have direct although insignificant positive impact on growth while Money supply exerts a significant positive impact on growth. In other words, Liquidity ratio and Cash reserve were statistically nonsignificant and have no significant impact on growth while Money supply has a significant relationship with economic growth in Nigeria during the period under review. This confirms the hypothesis that monetary policy (Money supply) has a significant impact on Nigeria economic growth within the period under review.

The empirical evidence emanating from the study reveals that money supply had a direct relationship with economic growth which suggests that it encourages investment and productivity of goods and services. Liquidity ratio and Cash reserve had positive but insignificant relation with growth hence little reliance can be built on the result. This can be viewed that the expected transformations of the economy through the monetary instrument of liquidity ratio and cash reserve policies for the periods covered are not being realized.

Table 3: Model 2 Result (Inflation)

Variable	Coefficient	Std. Error	T-statistic	Prob.
C	5388053	18.24943	2.952450	0.0071
LQR	-0.561754	0.388416	-1.446270	0.1616
CASHR	-0.000298	0.0000257	-1.159593	0.2581
MS_2	0.357663	1.082345	-0.330451	0.7441
INR	-0.0333121	0.000342	-0.139271	0.7331
EXR	-0.487250	0.376515	-0.375521	0.6725

$R^2 = 0.17622$ F $(3,27) = 1.646024$, DW $= 1.028958$ Adj. $R^2 = 0.068770$

Model Estimation
INFR = 53.88053 – 0.561754 (LQR) – 0.357663 (CASHR) – 0.0000298 (MS)
T   = (2.952)   (-1.446270)   (-0.330451)   (-1.159593)
         - 0.033312 (INR) - 0.487250 (EXR)
            (-0.139271)   (-0.375521)
Where the variables remain as previously defined.
The above table is the result of the static regression analysis where Inflation rate (INFR) was regressed on Liquidity ratio (LQR), Cash ratio (CASHR), Money supply (MS_2), Interest rate (INR) and Exchange rate (EXR).

Analysis of Results for Model 2
        The overall statistical significance of the estimated equation is non satisfactory (f* = 1.65), such that the joint influence of the endogenous variables were also low ($R^2 = 0.176$) meaning that 17.6 percent variation in inflation rate is being jointly explained by changes in monetary policy. This also reveals that monetary policy alone cannot effectively capture inflation control in Nigeria in the absence of other macro variables, such as investment and government expenditure. The result of the study further reveals the presence of auto correlation.
        The macro economic variable (inflation) has indirect relationship with monetary policy, thus conforms to a-priori expectation. This suggests that monetary policies discourage inflation in the economy. The study further reveals that a unit increase in monetary policy regulation reduces inflation in Nigeria although not significant. For instance a unit increase in commercial banks liquidity ratio and cash reserve helps to reduce inflation by a corresponding unit of 1.44 and 0.33 respectively. The tendency of excess liquidity in circulation that encourages inflation in the macro economic environment is minimized.
        Also, we could further deduce that a stable macro economic environment is necessary for effective monetary policy and economic growth. The explanatory variables have inelastic effect on inflation rate in Nigeria. This implies that a percentage change in them will bring or lead to a less than proportionate change in inflation rate in Nigeria.
        Our finding from this study is similar to the findings of Orji (2006) in his study on the effects of monetary innovations in Nigeria. Our result is also similar to that of Chukwu (2009) in his study on the effects of monetary policy on price stability in Nigeria.
        Thus from our findings, interest rate, exchange rate, broad money supply, liquidity ratio and cash reserve ratio have non significant influence on inflation in Nigeria. In other words, the application of any of the above mentioned variables by the monetary authority to control inflation have always produced a non significant impact. According to Chukwu (2009), the non significant influence of the above monetary policy instrument on inflation in Nigeria is due to the under developed and inefficient financial and credit sector in Nigeria.

Section Five: Summary Of Findings, Policy Recommendations And Conclusion
Summary of Findings
        In this study, we examined the impact of monetary policy on economic growth in Nigeria from 1980-2010. Before the application of the OLS, we conducted a unit root test to ascertain the stationarity of the variables. The result shows that most variables were stationary after first differencing while others became stationary after second differencing.
        The empirical investigation of the effectiveness of Central Bank of Nigeria's monetary policies was conducted and the major findings of the study are summarized below:
1.   It was found that overall, CBN's monetary policies play crucial role in influencing the level of productivity in the country. This result gives weight to the place of Central Bank in the national growth and development process of a nation.
2.   The regression analysis revealed that the adoption of various monetary policy measures by the Central Bank of Nigeria has no significant impact on the inflation rate in the country. This suggests that the problem of

inflation in Nigeria is not a monetary phenomenon but is rather attributable to the structural rigidity in the country. This is understandable as Nigeria is operating far below full employment equilibrium and the increase in GDP does not translate to improved purchasing power because poverty index has continued to worsen over the years. A lot still needs to be done in the areas of creating public awareness, improving operations of the financial market, enhancing the depth and breadth of the market and building regulatory capacity so as to appropriately position the market to face the challenges ahead.

Policy Recommendations

Given the above findings among other things, it is clear that the development of the Nigerian economy is highly dependent on the provision of the right environment for investment, which will in no doubt encourage economic growth and development. The following recommendations are hereby made:

Bridge the gap between monetary policy formulation and implementation. The non significance of most of the monetary policy instruments is strong evidence of a gap between policy formulation and implementation in Nigeria. I strongly agree with Eyiuche (2000) who stated that "an excellent plan, painstakingly and brilliantly formulated, devoid of effective implementation is as good as idealistic admiration of horses without ridding". Good monetary policies on paper without effective implementation will always produce non significant effects. Therefore, I recommend that the implementation mechanism of monetary policy should be checked for effective control of inflation in Nigeria.

Monetary policies should be used to create favourable investment climate by facilitating the emergence of market based on interest rate and exchange rate regimes that attract both domestic and foreign investments, create jobs, promote non oil export and revive industries that are currently operating far below installed capacity. In order to strengthen the financial sector, the Central Bank has to encourage the introduction of more financial instruments that are flexible enough to meet the risk preferences and sophistication of operators in the financial sector. The monetary authority should try to allow for coordination of fiscal and monetary policies for effective control of inflation in Nigeria. In other words, one of the problems that militate against the effectiveness of the monetary policy in achieving overall stability in Nigeria is lack of coordination between the monetary and other macroeconomic policies in the country.

Again, the monetary authority should trap disconnect between the formal and the informal credit sectors of economy. Due to the dualistic nature of Nigerian economy, the flow of credit and interest rate mechanism in the informal sector is not accounted for by the monetary authorities and this is most cases lead to counter effect to monetary policies in Nigeria.

Finally, relevant authorities should endeavour to make the financial sector less volatile and more viable as it is in developed countries. This will allow for smooth execution of the Central Bank monetary policies. Laws relating to the operation of the financial institutions could be made a bit less stringent more favourable for the operators to have room to operate more freely.

II. Conclusion

The role of the Central Bank in regulating the liquidity of the economy which affects some macroeconomic variables such as the output, employment and prices cannot be overemphasized. The central bank of Nigeria over the years has adopted different monetary policy management techniques to keep the economy in a stable state. However despite all of these, the attainment of the desired objectives of the monetary policy has been affected by a lot of macroeconomic factors. Nonetheless if the relevant authorities will adopt and pursue with vigour as well as patriotism some of the recommendations expressed in this study, Nigeria will in no little measure improve in the achievement of some of her macroeconomics objectives.

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