

# Monetary Policy A Catalyst for Inflation and Booster for Economic Growth; Evidence from Nigeria

ANACHEDO, CHIMA KENNETH<sup>1</sup>, OBI-NWOSU OGOCHUKWU VICTORIA PHD<sup>2</sup>, OKEKE, IJEOMA CHINWE PHD<sup>3</sup>, UBAH, CHIMARME BLESSING<sup>4</sup>

<sup>1, 2, 3, 4</sup> Department of Banking and Finance, Nnamdi Azikiwe University, Awka

**Abstract-** *Monetary policy is all about price stability which influences other economic indicators like, purchasing power parity, exchange rate, interest rate, level of income, availability of resources, standard and efficient distribution of goods and services. This study examines the degree to which the central Bank of Nigeria's monetary policy is effective to controlling inflation in the economy. The study made use of time series data on monetary policy variables (narrow money supply, broad money supply, exchange rate, interest rate and monetary policy rate), inflation rate and nominal gross domestic product over a time period ranging from 1990 to 2021. The data were all sourced from the Central Bank of Nigeria statistical bulletin. The data were analyzed using the Johansen Cointegration test and the Vector Error Correction Mechanism. Findings revealed that inflation has a positive but insignificant effect on economic growth in Nigeria. This indicates that higher inflation rates have led to higher rate of economic growth on the long-run. Interest rate was found to negatively and significantly affect economic growth in Nigeria on the long-run. Higher interest rate discourages demand for loans for investment purposes and this has a crippling and contractionary effect on the economic productivity of the country. The study recommends that monetary authorities should adopt expansionary policies to ensure adequate stock of money is available for transactions and investment purposes which boost economic growth on the long-run.*

**Indexed Terms-** *Monetary policy, Purchasing power parity, Interest rate, Narrow money supply, Broad money supply, Inflation rate.*

## I. INTRODUCTION

The burden of ensuring relative economic stability and economic activity improvement lies within the ambit of the modus operandi of the Central Bank of Nigeria. One of the major reasons the Central Bank of Nigeria was established is to promote monetary stability and a sound financial system by formulating and implementing monetary policy. Broadly speaking, monetary policy is all about price stability which influences other economic indicators like, purchasing power parity, exchange rate, interest rate, level of income, availability of resources, standard and efficient distribution of goods and services.

Inflation is said to be in play when there is a general and continuous increase in the prices of goods and services in the nation. When economic agents do not identify the difference between changes in nominal variables from changes in real variables and act as required, a cost is incurred due to the inefficient utilization of resources. Opportunity cost of holding money increases during period of inflation which causes under utilization of real resources in economic and financial transactions. So, purchasing power of money weakens during inflation and also reduces the standard of living in an economy.

Monetary authorities have tried to combat inflation and ensure price stability by adopting appropriate policies. Inflation level in an economy is been determined by the level of money supply and the stock of goods and services, the both of them becomes the target of policy makers when inflation becomes persistent. An excess or shortage in the supply of money could either induce excess aggregate demand resulting in higher inflation or induced stagnation thus retarding economic growth and development (Adedeji and Nuhu, 2015). It's also important to know that Fiscal policy might help in battling inflation pressure

but the Central Bank uses monetary policy as the primary or principal tool in ensuring price stability.

The works of economic theory, clearly states that monetary policy reduces inflationary pressure but most available empirical studies provide conflicting evidences, despite the central's Bank monetary policy, inflation level seems to still be on the high side there by dampening economic growth and eroding consumers purchasing power in Nigeria. High rate of inflation remains a key macroeconomic weakness which contributes to slow economic growth rate, high unemployment level, low purchasing power, decreased standard of living and it weighs down on external liquidity by discouraging financial account inflow which could lead to stagflation. This investigation attempts to know empirically the degree to which the central Bank of Nigeria's monetary policy is effective to controlling inflation in the economy, to examine how monetary policy instruments; narrow money supply, broad money supply, interest rate, exchange rate, monetary policy rate and inflation rate, affects economic growth. This study made use of historical quantitative data, the researchers employed time series data spanning from 1990 – 2021. The work is divided into five sections, section two reviews related literature, section three focuses on model specification and estimation procedure, while section four deals on the empirical results and the fifth section concludes the work.

## II. LITERATURE REVIEW

- Monetary policy

This refers to the Central Bank activities that are directed towards influencing the quantity of money and credit in an economy (Chima et al 2022). Monetary policy also refers to the specific actions taken by the Central bank to regulate the value, supply and cost of money in the economy with a view to achieving government macroeconomic objectives which includes economic growth, price stabilization, balance of payment equilibrium, employment, generation, e.t.c. (Adesoye et al 2012; Clement et al 2021). Central Bank of Nigeria (2011) defines monetary policy as a deliberate action of the monetary authorities to influence the quantity, cost availability of money and credit to achieve desired

macroeconomic objectives of internal and external balances.

- Inflation

This could be seen as a persistent and appreciable rise in the general level of prices (Jhingan, 2002). It could be said that not every rise in price level is termed inflation, for inflation to be declared it has to be a general price level increase which must be constant, enduring and sustainable.

- Economic growth

According to jhingan (2002), Henry and Sabo (2020) and Chima et al (2022) economic growth is the increase in potential output of an economy as a result of expansion in stock of capital and in labor force as well as improvement in the productivity of both labor and capital.

- Theoretical Framework

This study has its rooted in the quantity theory of money by fisher (1911), which says that changes in the stock of money supply will be translated into equi-proportionate change in the general price level (inflation), with the assumption that at full employment, the level of transaction (national output) and velocity is constant, or at least change slowly (Adenuga et al 2000; Henry and Sabo 2020). Which can thus be expressed as  $MV=PT$  (M = Money supply, V = Velocity, P = Price level and T = transaction level). This classical economist believes that money supply increase does not impact on the real GDP rather it increases price. This implies that adjustment in money supply will not change the macroeconomic variables (Anyanwu, 1993; Mason, 1996; jhingan, 2005; Ogbonna et al 2017). Put in a different view the Keynesian school of thought posit that when money supply increases it influences price but not directly and proportionately, he insisted that money does play active role in the economy by affecting the real sector as can be seen in the Keynesian quantity theory of money.

$$\uparrow MS \rightarrow \downarrow i \rightarrow \uparrow i \rightarrow \uparrow YON \rightarrow \uparrow COST \rightarrow \uparrow PRICE$$

The above shows that an increase in money supply (MS) will lead to a decrease in interest rate (i) given liquidity preference and in turn increase investment (i)

due to the marginal efficiency of capital (MEC) this will in turn increase income, output, and employment through the multiplier and in turn leads to increase in cost due to elasticity before increasing the price level (Keynes,1936; Ogbonna et al, 2017)

The protagonist of monetarist, Friedman (1956) posits that excess money balances are employed to obtain both financial assets and real assets like houses, land and consumers durables among others. The rise in prices of real assets encourages production which on the other hand increases demand for resources required for their production. Thus it can be pointed out that an expansionary monetary policy raises demand, prices and spending for financial and real assets and for services via substituting effect.

While the classical economist is of the view that money supply impact mostly on price, while the Keynesian economist using its causation effects showed the transmission effect of money supply and associated changes in other macroeconomic variables thereby repositioning output, income, employment and price, monetarist believes that the appreciation of monetary policy such as buying securities impacts on the financial and real assets. The classical believes in the full employment of resources and as such any change in money supply impacts directly on price but the view that money supply raises inflation is supported by the monetarist but on the contrary, the monetarist agrees with Keynes that the economy does not operate a full employment in the short run and conclude that expansionary monetary policy works positively in the long run. In Keynes view expansionary and contractionary monetary policy indirectly impacts on economic growth and finally on prices. For this study we wish to adopt Keynesian causative mechanism because of its chain effect on the economy.

- Empirical Review

One of the most important economic variables that can disrupt economic activities of any country is inflation. As a result of this, here are quite a number of empirical studies about inflation and its determinant.

Gul et al (2012) did an investigation on how monetary instrument influence macro economic variables such as inflation, interest rate, exchange rate, money supply

and real GDP in Pakistan. Ordinary least square (OLS) was used to analyze the relationship between variables, secondary data from 1995 to 2010 was employed and it was discovered that money supply has a strong positive correlation with inflation but negative correlation with output. Exchange rate also has negative impact on output in Pakistan.

Asuquo (2012) did a study on the impact of monetary policy on price stability in Nigeria from 2006 to 2012. The variables used were the monetary policy rate to proxy monetary policy indicators, while the other variables are inflation rate, market interest rate and exchange rate. The vector autoregressive (VAR) technique was used and results showed that market interest rate and exchange rate were more responsive to shocks in monetary policy rate than inflation in Nigeria.

Ngerebo (2016) investigated the effectiveness of monetary policy in controlling inflation in Nigeria from 1985 to 2012. Variables used were inflation, savings rate, monetary policy rate, prime lending rate, maximum lending rate, treasury bill rate, growth of narrow money supply, net domestic credit, growth of broad money supply, net credit to government and credit to private sector. OLS was used to examine the relationship, findings showed that some monetary policy instruments in Nigeria are effective in managing inflation (growth of broad money supply, credit to private sector, growth of narrow money supply, savings rate, net credit to government) while others were not statistically significant.

Henry and Sabo (2020) investigated the impact of monetary policy on inflation rate in Nigeria from 1985 to 2019 using the ARDL analysis, the findings shows that monetary policy rate and foreign exchange rate impacted negatively on inflation while broad money supply impacted positively.

Ezeanyeji and Ejefobihi (2015) examined the impact of inflation on economic growth of Nigeria from 1991 to 2013 using ordinary least square (OLS) of simple regression model the study shows that inflation has impacted negatively on economic growth of Nigeria. Ogunmuyiwa and Babatunde (2017) did a study on the impact of monetary policy on inflation in Nigeria from 2010 to 2016 using monthly data. The ARDL model

was used to ascertain the existence of long and short run equilibrium conditions. The study showed that narrow money and interest rate have positive and significant impact on inflation in Nigeria both in the short and long run.

Clement et al (2021) investigated monetary policy and inflation control in Nigeria from 1980 to 2019. Variables used include exchange rate, inflation rate, money supply, treasury bill rate, and monetary policy rate, using Error correction model in analysis showed that monetary policy has no significant impact on inflation control in Nigeria both in short and long run, while money supply and exchange rate has negative and insignificant impact on inflation control in Nigeria both in short and long run.

Srithilat and sun (2017) examined the effect of monetary policy on economic development in Lao PDR using co integration and Error correction model (ECM) from 1989 to 2016. The study showed that money supply, interest rate and inflation rate have negative effect on real gross domestic product, per capita in long run and only real exchange rate has a positive sign.

Ogbonna and Uma (2017) investigated monetary policy, inflation and economic growth in Nigeria from 1980 to 2016. Error correction model (ECM) was employed and results showed that narrow money supply, exchange rate, interest rate and inflation rate at a certain time had significant impact on RGDP, while broad money supply and reserve requirement have inverse relationship with RGDP at the period of study.

### III. METHODOLOGY

The study made use of time series data on monetary policy variables (narrow money supply, broad money supply, exchange rate, interest rate and monetary policy rate), inflation rate and nominal gross domestic product over a time period ranging from 1990 to 2021.

The data were all sourced from the Central Bank of Nigeria statistical bulletin.

The basic model of the study is expressed thus;  

$$Y = \alpha_i X_i + \mu_t \tag{1}$$

Where Y is the dependent variable; X<sub>i</sub> is a list of independent variables having α<sub>i</sub> as coefficient and μ<sub>t</sub> is the error term of the model.

This study examines two model; firstly, nominal GDP as a function of monetary policy and inflation and secondly, inflation rate as a function of monetary policy. These models are expressed as equations 2 and 3 thus;

$$NGDP = \alpha_1 INFR + \alpha_2 M1 + \alpha_3 M2 + \alpha_4 EXR + \alpha_5 INTR + \alpha_6 MPR + \mu_t \tag{2}$$

$$INFR = \alpha_1 M1 + \alpha_2 M2 + \alpha_3 EXR + \alpha_4 INTR + \alpha_5 MPR + \mu_t \tag{3}$$

Where M1, M2, EXR, INTR, MPR, INFR and NGDP represents narrow money supply, broad money supply, exchange rate, interest rate, monetary policy rate, inflation rate and nominal gross domestic product respectively.

Pre-estimation tests include; Augmented Dickey Fuller Unit Root Test, Pearson Product Moment Correlation test for Multi-collinearity.

The data were analyzed using the Johansen Cointegration test and the Vector Error Correction Mechanism.

### IV. RESULTS

The descriptive statistics of the data used in data analysis are presented in table 1:

Table 1: Descriptive Statistics

	NGDP	INFR	EXR	INTR	M1	M2	MPR
Mean	48050.41	18.15493	139.2178	18.97630	6454.198	11108.66	13.65625
Median	26748.53	12.00000	128.4073	18.06500	2003.022	3421.374	13.50000

Maximum	176075.5	76.75887	435.0000	31.65000	26014.72	43818.47	26.00000
Minimum	494.6437	0.223606	8.037800	11.55463	39.15620	68.66250	6.000000
Std. Dev.	52571.45	17.05066	111.2756	3.919542	8282.737	13206.22	3.838866
Skewness	0.956937	2.182565	0.940527	1.032672	1.204518	0.985262	0.810866
Kurtosis	2.706136	6.937268	3.372336	5.026391	3.128982	2.684864	5.196025
Jarque-Bera	4.999024	46.07524	4.902667	11.16254	7.760115	5.309703	9.936723
Probability	0.082125	0.000000	0.086179	0.003768	0.020650	0.070309	0.006955
Sum	1537613.	580.9578	4454.971	607.2416	206534.3	355477.0	437.0000
Sum Sq. Dev.	8.57E+10	9012.471	383850.0	476.2472	2.13E+09	5.41E+09	456.8438
Observations	32	32	32	32	32	32	32

Source: *Eviews 10 Descriptive Statistics Output, 2022*

The descriptive statistics table reveals that NGDP in Nigeria averaged ₦48, 050.4bn over the reviewed period while reaching an all-time high of ₦176, 075.5bn in 2022. The probability value of the Jarque-Bera (JB) Statistic is greater than 0.05 indicating that NGDP is normally distributed. Inflation rate on the other hand averaged 18.15% and peaked at 76.75%. The data however is not normally distributed as the probability of the JB statistic is less than 0.05. Other

variables that exhibited non-normality include narrow money supply, monetary policy rate and interest rate. The descriptive statistics further revealed that interest rate has ranged from 11.55% to 31.65% over the reviewed period, averaging 18.97%.

The results of the correlation among the independent variables are shown in table 2

Table 2: Correlation Results for Multi-Collinearity Test

	INFR	EXR	INTR	M1	M2	MPR
INFR	1.000000	-0.334414	0.455863	-0.235265	-0.262132	0.363475
EXR	-0.334414	1.000000	-0.643270	0.933105	0.935628	-0.330320
INTR	0.455863	-0.643270	1.000000	-0.632994	-0.654800	0.775650
M1	-0.235265	0.933105	-0.632994	1.000000	0.981916	-0.266469
M2	-0.262132	0.935628	-0.654800	0.981916	1.000000	-0.337314
MPR	0.363475	-0.330320	0.775650	-0.266469	-0.337314	1.000000

Source: *Eviews 10 Correlation Output, 2022*

The results of the correlation analysis among the independent variables reveal the presence of very high correlations (above 80%) between M1 and M2 ( $r=0.981916$ ), EXR and M2 ( $r=0.935628$ ), and EXR and M1 ( $r=0.933105$ ). This indicates that the analysis could be affected by Multi-correlation problems. Variables M1 and EXR were therefore excluded from the analysis being represented by M2.

- ADF Unit Root Test

The ADF Unit Root Test was conducted to test for the stationarity of the variables used in the analysis. The

decision rule applied in this test suggests the presence of a unit root (non-stationarity), if the obtained p-value is greater than 0.05 which is the chosen level of significance for this study. The data is therefore stationary when the obtained p-value is less than 0.05. The results of the ADF Unit Root Tests are summarized in table 3

Table 3: Summary of Stationarity test

Variable	Lag	Prob. (Level)	Prob. (1 <sup>st</sup> Difference)	Prob. (2 <sup>nd</sup> Difference)	Order of Integration
NGDP	1	1.0000	0.9560	0.0009	I(2)
INFR	1	0.0546	0.0030	0.0001	I(1)
INTR	1	0.4825	0.0000	0.0000	I(1)
MPR	1	0.2466	0.0001	0.0000	I(1)
M2	1	1.0000	0.3058	0.0000	I(2)

Source: Author's Compilation from Eviews 10 ADF Unit Root Output, 2022

The results of the unit root tests show that all the variables are non-stationary at level. However, at the first differencing, inflation rate, interest rate and monetary policy rate are stationary, while nominal GDP and M2 are stationary after second differencing. Therefore, inflation rate, interest rate and monetary policy rate are all integrated at the first order while nominal GDP and money supply are integrated at second order.

• Johansen Cointegration Test

The Johansen cointegration test was conducted to examine the cointegrating equations as well as the long-run relationships which exist among the variables. Table 4 reveals the summary of the Johansen Cointegration Rank Test (Trace) results while table 5 and table 6 shows the Normalized Coefficients for the cointegrating equations of interest, NGDP and INFR respectively.

Table 4: Johansen Cointegration test Summary

Date: 09/20/22 Time: 10:19  
 Sample (adjusted): 1992 2021  
 Included observations: 30 after adjustments  
 Trend assumption: Linear deterministic trend  
 Series: NGDP INFR INTR MPR M2  
 Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.739702	103.7014	69.81889	0.0000
At most 1 *	0.635044	63.32357	47.85613	0.0009
At most 2 *	0.481056	33.08422	29.79707	0.0202
At most 3	0.233797	13.40542	15.49471	0.1008
At most 4 *	0.165180	5.416164	3.841466	0.0199

Trace test indicates 3 cointegratingeqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

Source: Eviews 10 Johansen Cointegration Rank Test Output, 2022

The result of the Trace test indicates that three (3) cointegrating equations exist among the variables. The presence of cointegrating equations indicates that on

the long-run, any disequilibrium in the dynamics of monetary policy, inflation and economic growth will eventually be corrected on the long-run.

Table 5: Normalized Coefficient for Cointegrating Equation 1

Dependent Variable: NGDP

Variable	Normalized Coefficients (NCs)	Negative inversion of NCs	Standard Error (SE)	T-statistic = NC/SE
INFR	-4.651386	4.651386	46.1675	0.1008
INTR	1847.59	-1847.59	484.124	-3.8164
MPR	-869.2199	869.2199	333.901	2.6032
M2	-3.202017	3.202017	0.11911	26.8829
Variable	Adjustment Coefficients (ACs)	Negative inversion of ACs	Standard Error	T-statistic = AC/SE
D(NGDP)	0.436626	-0.436626	0.15758	-2.7708
D(INFR)	0.000373	-0.000373	0.00053	-0.7037
D(INTR)	-0.000314	0.000314	0.00014	2.2429
D(MPR)	-0.000191	0.000191	0.00017	1.1235
D(M2)	0.306464	-0.306464	0.06638	-4.6168

Source: Author's Computation from Eviews 10 Johansen Cointegration Test Output, 2022

The negative inversions of the normalized coefficients of cointegrating equation 1 which models NGDP as a function of inflation rate, interest rate, monetary policy rate and money supply reveals that inflation rate has a positive but insignificant effect on NGDP on the long-run. Monetary policy variables were found to have significant long-run effects on economic growth as their t-statistics were above 2.045 ( $t_{0.05}$ , d.f = 30); however, while MPR and M2 have positive effects on

economic growth, interest rate has a negative long-run effect on economic growth in Nigeria.

The adjustment coefficients reveals that on the short-run D(NGDP), D(INFR) and D(M2) pull NGDP towards equilibrium while interest rate and monetary policy rate pushes NGDP towards equilibrium on the long-run. The adjustments are significant in the cases of D(NGDP), D(INTR) and D(M2) as their t-statistics are greater than 2.045.

Table 6: Normalized Coefficient for Cointegrating Equation 2

Dependent Variable: INFR

Variable	Normalized Coefficients (NCs)	Negative inversion of NCs	Standard Error (SE)	T-statistic = NC/SE
INTR	-38.81744	38.81744	10.7741	3.6028
MPR	3.337257	-3.337257	8.96162	-0.3724
M2	0.003457	-0.003457	0.00305	-1.1334
Variable	Adjustment Coefficients (ACs)	Negative inversion of ACs	Standard Error	T-statistic = AC/SE
D(INFR)	-0.005526	0.005526	0.02474	-0.2234
D(INTR)	0.023833	-0.023833	0.00433	-5.5042
D(MPR)	0.016998	-0.016998	0.00738	-2.3033
D(M2)	7.662014	-7.662014	2.48207	-3.0869

Source: Author's Computation from Eviews 10 Johansen Cointegration Test Output, 2022

Table 6 reveals that on the long-run, among the three monetary policy variables, only interest rate

significantly affects inflation rate in Nigeria as its obtained t-statistics is greater than 2.045. The inversed normalized coefficients reveals that interest rate has positive long-run effect on inflation rate while money supply and monetary policy rate negatively affect inflation rate in Nigeria on the long-run.

Based on the results of the adjustment coefficients, on the short-run, all the differenced monetary policy variables reduce inflation rate towards equilibrium to

a significant extent while differenced inflation rate pushes inflation rate upward towards equilibrium. However, this adjustment is insignificant.

- Vector Error Correction Mechanism (VECM)  
The result of the VECM is shown in table 7, revealing the error corrections which are similar to the adjustment coefficients obtained from the cointegration tests.

Table 7: Vector Error Correction Mechanism Results

Vector Error Correction Estimates

Date: 09/20/22 Time: 10:21

Sample (adjusted): 1992 2021

Included observations: 30 after adjustments

Standard errors in ( ) & t-statistics in [ ]

Error Correction:	D(NGDP)	D(INFR)	D(INTR)	D(MPR)	D(M2)
CointEq1	0.372003 (0.14739) [ 2.52394]	0.000389 (0.00055) [ 0.71148]	-0.000407 (9.6E-05) [-4.25117]	-0.000258 (0.00016) [-1.58163]	0.268806 (0.05486) [ 4.89989]
CointEq2	13.56353 (6.81838) [ 1.98926]	-0.005526 (0.02529) [-0.21850]	0.023833 (0.00442) [ 5.38593]	0.016998 (0.00754) [ 2.25378]	7.662014 (2.53786) [ 3.01909]
D(NGDP(-1))	-0.152244 (0.29794) [-0.51099]	-0.000307 (0.00111) [-0.27798]	0.000219 (0.00019) [ 1.13327]	0.000239 (0.00033) [ 0.72567]	-0.384697 (0.11090) [-3.46901]
D(INFR(-1))	5.157196 (50.5297) [ 0.10206]	0.317365 (0.18743) [ 1.69326]	0.122720 (0.03279) [ 3.74230]	0.088931 (0.05589) [ 1.59110]	3.923750 (18.8076) [ 0.20863]
D(INTR(-1))	198.1761 (307.610) [ 0.64424]	0.778466 (1.14101) [ 0.68226]	0.581842 (0.19963) [ 2.91458]	0.757437 (0.34026) [ 2.22604]	-19.07366 (114.495) [-0.16659]
D(MPR(-1))	-40.43791 (215.766) [-0.18742]	0.625262 (0.80033) [ 0.78125]	-0.191446 (0.14003) [-1.36720]	-0.619925 (0.23867) [-2.59743]	86.93442 (80.3099) [ 1.08249]
D(M2(-1))	0.921415 (0.50640) [ 1.81954]	-0.000343 (0.00188) [-0.18238]	-0.000976 (0.00033) [-2.96880]	-0.000721 (0.00056) [-1.28711]	0.032623 (0.18849) [ 0.17308]



C	5600.585 (1469.67) [ 3.81077]	2.094087 (5.45141) [ 0.38414]	-0.080268 (0.95378) [-0.08416]	-0.348708 (1.62567) [-0.21450]	3400.743 (547.024) [ 6.21681]
---	-------------------------------------	-------------------------------------	--------------------------------------	--------------------------------------	-------------------------------------

Source: Author's Extract from Eviews 10 VECM Output, 2022

The VECM results indicates that lags of D(NGDP) and lags of D(MPE) increase the value of NGDP till it gets to equilibrium while lags of D(M2), lags of D(INTR) and lags of D(INFR) decrease the value of NGDP till it reaches equilibrium. On the other hand, lagged values of D(INFR), D(INTR) and D(MPR) pulls the value of inflation downwards towards equilibrium.

## V. DISCUSSION

The dynamics of economic growth, inflation and monetary policy have been one that several theories and empirical studies have attempted to comprehend. There has always been contrasting views regarding the relationships between monetary variables, price levels and output growth. The examinations of this study are therefore geared towards uncovering the long-run effects of monetary policy on inflation and ultimately on economic growth in Nigeria.

The findings of the Johansen Cointegration Test revealed that on the long-run, inflation has a positive but insignificant effect economic growth in Nigeria. This indicates that higher inflation rates have led to higher rate of economic growth on the long-run, albeit to an insignificant extent. Adjustment coefficients however revealed that on the short-run, inflation rate exerted negative pressures in pulling economic growth towards equilibrium. This finding backs up the empirical findings of Srithilat and Sun (2017) and Ezeanyejji and Ejefobihi (2015) who found that inflation rate negatively affects real gross domestic product in the short-run.

Interest rate was found to negatively and significantly affect economic growth in Nigeria on the long-run. Higher interest rate discourages demand for loans for investment purposes and this has a crippling and contractionary effect on the economic productivity of the country. Srithilat and Sun (2017) recorded similar findings as their study revealed that interest rate negatively affected real gross domestic product in the

long-run. However, the adjustment coefficients revealed that on the short-run, higher interest rates led to higher economic growth in Nigeria.

Economic growth in Nigeria was also found to be positively affected by monetary policy rate and money supply in Nigeria to a significant extent on the long-run. This finding agrees with the Keynesian quantity theory of money which asserts that increase in the money supply will lead to decrease in interest rate and an increase in investments which will in turn increase national income and output (Ogbonna et al, 2017).

On the other hand, Interest rate was found to positively and significantly affect the rate of inflation in Nigeria on the long-run, indicating that high interest rates will eventually lead to high level of inflation in Nigeria. This finding is in line with the findings of Ogunmuyiwa and Babatunde (2017) who found the existence of a long-run positive and significant impact of interest rate on inflation. This implies that interest rate charged on loans sourced for production of goods and services exerts an upward pressure on the prices of these goods and eventually causes higher inflation rate.

The findings of the study further revealed that the money supply and monetary policy rate, do not have significant long-run effect on inflation rate in Nigeria. Clement also found that monetary policy has not significantly controlled inflation rate in Nigeria. However, the findings of the study revealed that on the short-run, money supply and monetary policy rate significantly contribute to adjusting the inflation rate downwardly towards equilibrium. Ngerebo (2016) also found that broad money supply significantly affected inflation in Nigeria.

## CONCLUSION

From the findings of the study, it can be deduced that monetary policy significantly affects economic growth in Nigeria on the long-run and short-run. As a result,

every monetary policy decision made by the Central Bank of Nigeria will have both immediate and lasting consequences on the economic growth in Nigeria. The impacts of monetary policy on inflation are found to be majorly short-run impacts. Interest rate is however a monetary policy tool that has significant implications on inflation rate on the long-run.

#### RECOMMENDATIONS

In line with the findings of the study, the following recommendations should be considered;

- The monetary authorities should adopt expansionary policies to ensure adequate stock of money is available for transactions and investment purposes which boost economic growth on the long-run.
- A slightly upward review of the Monetary Policy Rate would also serve to channel the available stock of money efficiently to the most productive sources. This increase would also see a reduction in the rate of inflation on the long-run
- The monetary authorities should also develop policies that reduce the interest rate charged by banks on loans and advances as this would reduce inflation rate and improve economic growth on the long-run
- In controlling inflation on the short-run, the monetary authorities should consider flexible adjustments to the interest rate, monetary policy rate and money supply.

#### REFERENCES

- [1] Adedeji, A. & Nuhu, N. (2015). Monetary policy and inflation control in Nigeria. *Journal of Business and Sustainable Development*, 6(8),108-115.
- [2] Adenuga, I. A., Taiwo, B. H., and Efe, E. P (2000), "Is inflation purely a monetary phenomenon? Empirical investigation from Nigeria (1970-2009)", *European Scientific Journal*, 4(2),32-50
- [3] Adesoye, A. B., Maku, O. E. & Atanda, A. A. (2012). Is monetary policy a growth stimulant in Nigeria? A Vector Autoregressive Approach. *Munich Personal RePEc Archive (MPRA)*.No. 35844, pp1-24.
- [4] Anyanwu, J. C (1993). *Monetary Economics: Theory, Policy and Institutions*, Onitsha: Hybrid Publishers Ltd.
- [5] Asuquo A., (2012): Inflation accounting and control through monetary policy measures in Nigeria",*Journal of Business and Management*, 53-62.
- [6] Central Bank of Nigeria (2011): Understanding monetary policy series 1, Abuja, Nigeria
- [7] Chima, K. A., Jisike J. O., Elechi S. J., and Chisom N. E., (2022). Healthy interaction between fiscal and monetary policies; A panacea for economic development and sustainability. *World Journal of Advanced Research and Reviews*, 15(01), 708–718.
- [8] Clement, I.E., Cyril, O.O., Imoagwu, C.P., and Ejefobihi, U.F., (2021). Monetary policy and inflation control: the case of Nigeria. *European Journal of Management and Marketing Studies*, 6(2), 128-150
- [9] Ezeanyej, C. I. & Ejefobihi, U. F. (2015). Inflation and Economic Growth in Nigeria: An Impact Analysis. *Wilolud Journals: Continental Journal of Social Sciences*, 8(1), 1-12
- [10] Fisher, I (1911). *The Purchasing Power of Money: Its Determination and Relation to Credit, Interest and Crises*, Augustus M. Kelly, Publisher, London
- [11] Friedman, M., (1956). The quantity theory of money-A restatement, in studies in the quantity theory of money, university of Chicago press, Chicago,3-21.
- [12] Gul, H., Mughal, K., and Rahim, S. (2012). Linkage between Monetary Instruments and Economic Growth. *Universal Journal of Management and Social Sciences*, 2(5),69-76.
- [13] Henry, A.E., and Sabo, M.A., (2020). Impact of monetary policy on inflation rate in Nigeria: Vector Autoregressive Analysis. *Bullion*, 44(4), 78-90.
- [14] Jhingan, M. L., (2002). *Macroeconomic theory*, 10th Edition, Vrinda Publications Ltd, New Delhi.

- [15] Jhinghan, M. L. (2005). *Monetary economics*. New Delhi: Vrinda Publications India.
- [16] Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. London: Macmillan
- [17] Mason, W. E (1996). *Classical Monetary Theory*, in: Butos, W. N (eds), *Classical Versus Monetary Theory*, Boston, MA, Springer.
- [18] Ngerebo, A. T. A., (2016). Monetary Policy and Inflation in Nigeria, *International Journal of Finance and Accounting*, 5 (2),67-76.
- [19] Ogbonna, B. M, and Uma, K. E., (2017). Monetary Policy, Inflation and Economic Growth in Nigeria. *International Journal of Research in Management, Economics and Commerce*, 7(10), 126-134.
- [20] Ogunmuyiwa, M. S. & Babatunde, O. J. (2017). Monetary policy and inflation management in Nigeria: An ARDL Approach. *Osogbo Journal of Management (OJM)*, 2(3),1– 8.
- [21] Srithilat, K and Sun, G (2017). The Impact of Monetary Policy on Economic Development: Evidence from Lao PDR, *Global Journal of Human Social Science: Economics*, 17(2), 9-16