ANALYSIS OF THE INFLUENCE OF MONETARY POLICY ON INFLATION IN NIGERIA

OGBONNA UDOCHUKWU GODFREY PhD.

DEPARTMENT OF BANKING AND FINANCE,

COLLEGE OF MANAGEMENT AND SOCIAL SCIENCES, RHEMA UNIVERSITY ABA, NIGERIA

&

UKEKWE CHUKWUDI EMMANUEL

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF NIGERIA NSUKKA, NIGERIA

Abstract
This research focused on the Analysis of the Influence of Monetary Policy on Inflation in Nigeria, using a time series data of 1980 to 2019. The Autoregressive Distributed Lag (ARDL) model was employed for this study including unit root test which showed both long and short run relationship, using the E-view version 11.0 as the analytical tool. Monetary policy which is the independent variable was proxied by Monetary Policy Rate (MPR), Liquidity Ratio (LQR) and Broad Money Supply (BMS), while inflation was proxied by Rate of Inflation (RoI). The outcome of the analysis revealed that MPR and LQR have a long run relationship with Rate of Inflation (RoI). The BMS from the analysis is insignificant at the long run though there exists a short run relationship between BMS and RoI. It is instructive to note that this study reveals that an increase in MPR increases inflation both at long and short run. This is contrary to the monetary theory which opines that an increase in MPR brings about a reduction in the rate of inflation. The explanation of this could be related to the fact that an increase in MPR affects the amount of money by way of credit in the hands of manufacturers. If money is not available as credit in the hand of manufacturers, it reduces the quantity of products in the market and aggregate demand will now surpass aggregate supply as such triggers demand-pull inflation. The study equally revealed that broad money supply can only influence inflation at the short run and not at the long run.Consequently, the researchers are of the opinion that the Central Bank of Nigeria should do a review of their monetary policy based on the revelation of this study, particularly in the area of Broad money Supply- BMS and Monetary Policy rate.
Keywords: Economy, equilibrium, stationarity, non-stationarity, stability

Introduction

Monetary policy of any country more or less determines the rate at which inflation of that country is controlled. Monetary Policy brings about injection of liquidity into any economy; while on the other hand, it reduces the level of money supply in an economy to prevent inflation. Monetary Policy can increase or reduce cost of investment. Households spend more money when interest rates are low, while the reverse is the case when interest rates are high. Monetary Policies control the flow of aggregate demand with its resultant effects (high inflation and unemployment as the case may be). The Central Bank of Nigeria (CBN) by virtue of Decree No 24 of 1991, in conjunction with the Federal Ministry of Finance is saddled with the responsibility of advising the Federal Government of Nigeria on the correct Monetary Policy tools to be adopted for the economy all the time. Unstable and high inflation is as a result of Poor Monetary Policies, which culminates in negative effect on economic growth. It is an established fact that the rate of inflation in an economy determines the level of health and as a matter of fact the value of the currency of that economy and by extension, the standard of living of the citizens of that country. To be precise, Inflation affects negatively, the purchasing power of any currency and determines the level at which a currency can be used to purchase goods and services.

In Nigeria, the problem of steady fluctuation in inflation rates for so many years down the line has remained consistent to the extent that some schools of thought begin to wonder whether the Central Bank of Nigeria is using the tools of monetary policy properly or not. Looking at the current devaluation of the Nigeria currency, it has become imperative to look critically at the issue of inflation with a view to determining the level at which Monetary policy influences inflation.

This study is geared towards analyzing the influence of Monetary Policy on Inflation in Nigeria for the past twenty years

Literature Review

Monetary policy can be seen as determined efforts and actions made by the Central Bank to check the level of money in circulation and the cost of funds in an economy. This (regulation) will enable Government achieve their goal of macroeconomic stability. These goals are price stability, economic growth, Balance of payment equilibrium, reduction of unemployment, increase in investment etc. Inflation is seen as the increase in general price level of commodities and services in any economy. When there is a general increase in the prices of commodities and services, it reduces the purchasing power of the currency involved thereby bringing down the value of the currency in that economy. The implication of high inflation is the reduction in the standard of living of the citizenry, and consequently a southward movement of the economy. Orubu(1996) stated ''that is why the achievement of price stability has always been one of the basic purposes of macroeconomic policy in both developed and less developed countries''. High inflation is inimical to the economic growth of any economy and efforts must be made by any Government to keep it at its barest minimum.

We have four types of inflation (Amadeo & Boyle, 2021), as stated hereunder:

(i)   Creeping Inflation. This is the type of inflation that brings about a slow rise in prices. A consistent rise in the price of goods and services that is less than 3% per annum can be seen as a creeping inflation and is adjudged important for the growth of the economy.

(ii)   Walking Inflation: This is a moderate upward movement of prices in a year in a single digit. This happens at a rate between 3% and less than 10%. Whenever inflation gets to this level, it is a sign to the authorities to gear up for control before things get out of hand.

(iii)   Galloping Inflation: At this stage, the prices of commodities and services have gone up to the rate of 10% or more. This rate of inflation will usually have a negative effect on the economy and will affect the welfare of the citizenry adversely.

(iv)   Hyper Inflation: This is the type of inflation whereby prices increase beyond double or even triple digit rates, for instance 50% or more. At this point there is a consistent decline in ability of the currency to buy products and services, which on the other hand brings a total fall on the monetary system and subsequently a collapse of the economy.

Theoretical Framework
Quantity Theory of Money

Irving Fisher is described as the father of Quantity theory of Money. This theory, explains the relationship between Money and general price level (Geoff,2012). In his opinion, Fisher (1932) while describing the quantity theory of Money, said that there are two types of controls in the issue of quantity theory of money viz short-run and long-run monetary control. The short run monetary control was influenced by interest rates, while that of the long-run was determined by real cash balance. He further explained that the prices of goods and services can only increase after interest rates have been increased, which determines the level of operations cost of companies (Jelilov, 2016). The formular below shows the quantity theory of money which is determined by the relationship between output, prices and money:

M x V= P x Y   Equation 1

In Equation1 above M=Quantity of Money, V=Velocity of money, P= Price level and Y = the real level of output. This equation is seen as quantity theory of money whereby there is a relationship between all the variables mentioned therein. It is assumed that V and Y are constant (fixed). Y (Real level of output) was seen to be constant at the level of full employment of the economy. The V(Velocity of money) at the other hand are seen to have no effect. The implication is that the Price level is proportional to the quantity of money since the velocity of money and the level of output are fixed. This therefore explains the quantity theory of money indicating that the equilibrium price level is proportional to the quantity of money.

Liquidity Preference Theory

Keynes (1936) established the motives of keeping money to be speculative, precautionary and transaction. In his book (The General Theory of Employment, Interest, and Money) Keynes differentiated between the three motives of holding money. The Precautionary motive of keeping money is to hedge against unforeseen circumstances, such as sickness, fire outbreak, theft, loss of job, accident etc. According to him, the theory of Speculative demand for money is the most important which has a relationship with interest rate though negatively, and states that people can hold money or in near money instruments such as bonds when they anticipate a change in interest rate, subsequently. The holding of money in this case is done in order to make capital gains. On the other hand, if the expectation falls, then capital losses become inevitable. In addition, families need to hold money in order to handle expenses till the next time they will receive their pay. For those that are dependent (paid workers), their salaries come either weekly or monthly and money are needed to run expenses in the house. Looking at the three motives for keeping money, Keynes opined that there is a relationship between demand for and supply of money and interest rate. The forces of demand and supply determine the level of money available. Keynes is of the view that whenever there is a shift in equilibrium between demand for and supply of money, interest rate changes. It is important to note as opined by Keynes that the supply of money and level of liquidity preference are not dependent on one another. Any of them can change to bring about a change in interest rate. The implication of this theory is that the point whereby there is equilibrium in money demand and supply is the point of

Liquidity preference having put into consideration all the motives of holding money.

Structuralism Theory

The theory of Structuralism states that the rigidity in the economic structure of various nations forms the bedrock of inflation majorly in an economy of developing countries. The theory further states that this is as a result of dogmatic capital formation, Institutional substructures, level of output, agriculture, unemployment and labour force. This theory tries to advance the reasons of inefficiency in the system as reason for inflation.

The Demand Pull Theories of Inflation

A situation where aggregate demand for commodities and services surpasses aggregate supply and consequently resulting in a general rise in the price levels is the concept of Demand-Pull theories of Inflation. In this circumstance when more demands are chasing supplies not equal to demand, then there will be rush for the available goods and services resulting in price negotiations which eventually leads to an increase in the prices of the commodities and services. Another name for this type of Inflation is Surplus demand In Inflation.

Cost – Push Theories of Inflation

When the cost of production increases which may be as a result in the increase in prices of raw materials or wages paid to factory workers, the ultimate thing for the company/firm to do in order to continue to make profit is to increase the price of the final product. Since it is the producer of the product that is increasing price in this case, it becomes a supply driven increase in price. This type of cost is common in products where there is little or no competition. In Nigeria where there is

inconsistency in prices of production determinants like fuel, diesel etc, immediately there is an increase in the prices of these determinants, it makes for general increase in the price levels.

Review of Empirical Literature

Various Scholars have done some work that is related to this topic. This review will be restricted to some works in Nigeria alone, since this paper is restricted to the Analysis of the Influence of Monetary Policy on Inflation in Nigeria.

The study of Ogunmuyiwa and Babatunde (2017), where they examined the impact of money policy on inflation in Nigeria from January 2010 to October 2016 using the ARDL model, including unit roots test which revealed a long and short run equilibrium. At last, it was established that narrow money and interest rate have positive and significant impact on inflation. The conclusion of the study was that monetary policy variables have significant impact on inflation in Nigeria.

Ujuju and Etale (2016) looked at the role of interest rates and liquidity ratios in controlling inflation in Nigeria. They used interest rate, minimum rediscount rate, liquidity ratio, and cash reserve ratio as independent variables, regressed against inflation as the dependent variable covering from 1982 to 2011. The study discovered that the the independent variables have no significant impact on inflation.

Ezeanyeji and Ejefobihi et al (2021), focused on the impact of monetary policy on inflation control in Nigeria. The scope of the study was from 1980 to 2019, using the Augmented Dickey Fuller test, Johansen's co-integration test, the Error correction Model (ECM) as tools of analysis. Exchange rate, money supply (%GDP), treasury bill rate and monetary policy rate were used as

independent variables against inflation rate as dependent variable. The research showed that monetary policy has no significant impact on inflation control in Nigeria both in the long and short run.

Itodo, Akadiri and Ekundayo (2017) in their Monetary Policy and Price Stability in Nigeria (1981 to 2015), employed the Vector Autoregressive (VAR) model, with in-built differencing to take care of unit root in the time series data discovered from their findings that money supply has no significant relationship with price level in Nigeria. Gbadebo and Mohammed (2015) on their own part examined the effectiveness of monetary policy as a measure to control inflation in Nigeria. They used time series data collected for quarter 1 of 1980 to quarter 4 of 2012. Co-integration analysis and error correction model was used and it was discovered that interest rate, exchange rate, money supply and oil price are the major causes of inflation in Nigeria. The study also indicated that money supply showed significant positive impact on inflation in the long and short run.

Onwachukwu(2014) in their examination of Impact of Monetary Policy on Inflation Control in Nigeria, looking at data from 1970 to 2010 and using Ordinary Least Square (OLS) as a tool of analysis discovered that bank rate, deposit with Central Bank, liquidity ratio, and broad money supply are significant in explaining inflation switches. Exchange rate, however was discovered to be insignificant in inflation changes in Nigeria.

Emerenini and Eke (2014) looked at the determinants of Inflation in Nigeria. They used the ordinary least square method and co-integration in their analysis and discovered that between 2007 to 2014, money supply and exchange rate influenced inflation, while treasury bill rate and monetary policy rate did not.

Also Iya and Aminu (2014) while surveying the determinants of Inflation in Nigeria, used the OLS technique and they discovered that the data of 1980 to 2012 showed a positive influence of money supply and interest rate on inflation and a negative influence of exchange rate and government expenditure on inflation.

In their review of the effects of inflation rate on economic growth, Bakare, Kareem and Oyelekan (2015), using the Augmented Dickey Fuller and Granger causality tests, discovered that inflation rate was negatively and significantly related to economic growth, while Gross Domestic Product granger caused inflation. This was achieved by using annualized time series data from 1986 to 2014 secondary data from CBN statistical Bulletin.

Agwu(2015)surveyed the things that helped the economic growth of Nigeria. They used Vector Error Correction Model to know the short run and long run philosophy of economic growth and it was discovered that in the long-run, government expenditure and oil revenue increased economic growth. On the other hand, Interest and inflation rates had negative and significant impact on economic growth.

Omoka and Ugwuanyi (2010) investigated the relationship between money, inflation and output, using the cointegration and Granger causality techniques it was observed that cointegrating vector was present in the data used. Similarly, it was discovered that Money supply Granger-caused inflation and output which by implication shows that the stability of the monetary system can influence the stability of price positively in the Nigeria economic system.

Ajisafe and Folorunso (2002) examined the effectiveness of monetary and fiscal policy on economic activity in Nigeria. They used co-integration and error correction model with the data of 1970to1998. It was discovered that monetary policy had a big impact on economic activity than fiscal policy in Nigeria. Chukwu (2009), investigated the effect of monetary policy innovations in Nigeria. The techniques used were Structural Vector Auto-Regression (SVAR) model and analyzed the broad money (M2), minimum rediscount rate (MRR) and real effective exchange rate (REER) which was used as alternative policy instruments to know the effects of monetary policy shocks on output and prices in Nigeria. It was discovered that monetary policy transformation has a real and nominal effect on economic framework.

Onyeiwu (2012) examined the effect of monetary policy on the Nigerian Economy, the Ordinary Least Square (OLS) technique, using money supply as proxy for monetary policy was used and it was discovered that Monetary policy exhibited positive impact on the GDP growth and balance of payment. It was also observed that money supply had a negative effect on rate of inflation. Fasanya, Onakoya and Agboluaje (2013), had the same result with Onyeiwu (2012) where they discovered after using Error Correction Model in analyzing the data of 1975 to 2010, that there was a long-run relationship between economic growth and monetary policy. External reserve, exchange and Inflation rates were observed to significantly influence the growth of Nigeria's economy.

In his examination of the relationship between channels of monetary transmission and selected macroeconomic aggregates in Nigeria, Bernhard (2013), discovered that interest rate, exchange rate and credit channels were useful for the target of inflation.

Similarly, in the survey of Anwor and Okorie (2016) on the impact of monetary policy on economic growth in Nigeria, using error correction model technique, it was discovered that monetary policy impacts positively on economic growth and price stability. It was equally observed that a unit increase in cash reserve ratio will increase economic growth by seven times. Olorunfemi and Dotun (2008) studied the effect of monetary policy on economic performance in Nigeria. They used simple regression in their analysis to arrive at the result that negative relationship exists between interest rate and GDP, inflation and GDP.

Okwo, Eze, F. Nwoha, C. (2012), evaluated the effect of monetary policy outcomes on macroeconomic stability in Nigeria. In their analysis, using the Ordinary Least Square technique, the result showed that all the variables were not significant having used credit–to-private sector, net credit-to-government, and inflation as a measure of monetary policy.

Research Gap

There has been conflicting discovery on this topic both in the empirical work and in the theories. While some research says that Monetary policy does not impact on inflation, some states otherwise. This research will harmonize positions, while improving on the ones done in the past both in analytical tools and time series.

Method of Study

We present the method applied in the study as follows:

Data Collection

Data for this study was sourced from Central Bank of Nigeria Bulletin for the

period 1980 to 2019 with a total of 35 recorded observations.

Model Justification and Development

The Autoregressive Distributed Lag (ARDL) model is an ordinary least square (OLS) based model that can be applied to both non-stationary time series as well as to times series with mixed order of integration (Min & Guna, 2018). Similarly, Emeka and Aham (2016) recommended a more realistic Autoregressive Distributed Lag (ARDL) approach to cointegration for a longrun relationship when variables are I(0), I(1) or a combination of both. The ARDL modell thus fits specifically with the ADF outcome presented in this paper which reported a mixed order of integration (LQR, MPR = I(0) and MPR,RoI = I(1)). In addition, according to Haug (2002), the ARDL approach is more reliable for small samples as compared to Johansen and Juselius's cointegration methodology. In our case of 35 observations, the model seems most appropriate.

The focal points here are the monetary policy and Inflation. While Monetary Policy proxies the independent variable, Inflation represents the dependent variable.

Model Specification

Given the above discussion, the model for the study is specified thus:

RoI= f (MPR,LQR,BMS) …………………… (1)

RoI= f (MPR) ……………………………….. (2)

RoI = f (LQR,) ……………………………… (3)

RoI = f(BMS) ……………………………… (4)

The above model is estimated linearly in form of an equation as thus:

$RoI = \beta_0 + \beta_1 MPR + \beta_2 LQR + \beta_3 BMS + \mu$ …………………………… (5)

$RoI = \beta_0 + \beta_4 MPR + \mu$ ……………………………………….. (6)

$RoI = \beta_0 + \beta_5 LQR + \mu$ ………………………………………………(7)

$RoI = RoI = \beta_0 + \beta_6 BMS + \mu$ …………………………………… (8)

μ = stochastic variable or the error term

By transforming the linear function into their log form, we have;

$LogRoI = \beta_0 + \beta_1 LogMPR + \beta_2 LogLQR + \beta_3 LogBMS + \mu$ ……………………… (9)

$LogRoI = \beta_0 + \beta_4 LogMPR + \mu$ ……………………………………… (10)

$LogRoI = \beta_0 + \beta_5 LogLQR + \mu$ ……………………………………… (11)

$LogRoI = \beta_0 + \beta_6 LogBMS + \mu$ ……………………………………… (12)

Where:

β_0 = Constant Term of the Regression Equation

$\beta_{1,4}$ = Regression Coefficient of MPR

$\beta_{2,5}$ = Regression Coefficient of LQR

$\beta_{3,6}$ = Regression Coefficient of BMS

μ_t = Random Variable/Stochastic

$RoI = \beta_0 + \beta_1 MPR + \beta_2 LQR + \beta_3 BMS + \mu$ …………………………… (5)

A priori Expectation

It is expected that $\beta_{1,4} > 0$, $\beta_{2,5} > 0$, $\beta_{3,6}, > 0$

1. $B_{1,4}$ are the coefficients of Monetary Policy Rate (MPR) respectively. It is expected that these will be greater than zero because the more money in circulation the more inflation in the economy.

2. $\beta_{2,5}$ are the coefficients of Liquidity Ratio (LQR) respectively. It is expected that these will be less than

zero because the lesser the liquidity ratio the more money available in circulation and hence higher inflation.

3. $\beta_{3,6}$ are the coefficients of Broad Money Supply (BMS). It is expected that the more money in circulation, the more stimulation of aggregate demand, hence rise in the rate of Inflation.

Application of the ADRL Model to the study

The data was analyzed in Eviews version 11.0. The ADRL model was used to project both the short run and long run

inflation rate (Ro1). The short run projection was computed using a maximum lag of 4 for both the dependent and independent variables. The maximum lag was determined using the Akaike info criterion (AIC).

Results

Descriptive Statistics

A descriptive statistics of the series (mean, median, minimum and maximum values, skewness, kurtosis, as well as the standard deviation, Bera–Jacque normality test) was carried out in order to gain more insight on the nature of the data series. The result is presented in Table 1.

Table 1: Descriptive Statistics of the Series

|	ROI	BMS	LQR	MPR
Mean	19.474	73.3578428...	47.3857142...	13.6571428...
Median	12	15.0596	46.5	13.5
Maximum	76.8	342.517	75.8	26
Minimum	0.2	0.223	29.1	6
Std. Dev.	18.6893022...	102.047567...	10.5726379...	3.83246854...
Skewness	1.72123738...	1.28108613...	0.51592685...	0.75955695...
Kurtosis	4.85555946...	3.33909267...	3.18319556...	4.87693530...
Jarque-Bera	22.3033613...	9.74124457...	1.60166223...	8.50294839...
Probability	1.43511471...	0.00766859...	0.44895567...	0.01424322...
Sum	681.589999...	2567.5245	1658.5	478
Sum Sq. Dev.	11875.8606...	354066.007...	3800.54285...	499.385714...
Observations	35	35	35	35

Table 1 above shows the descriptive statistics of the series. It can be inferred that the maximum and minimum values of the respective series tilt far away from the mean. This is understandable due to the rapid changes in inflation over the years considered. Similarly, from the results of the Jarque-Bera probability test for normality, the series are all normally distributed.

Although normality is not essential for time series analysis but it is still a desirable feature.

Stationarity Test

A priori graph of the variables was plotted and presented in Figure 1 in order to see the nature of the trend (Hyndman 2018).
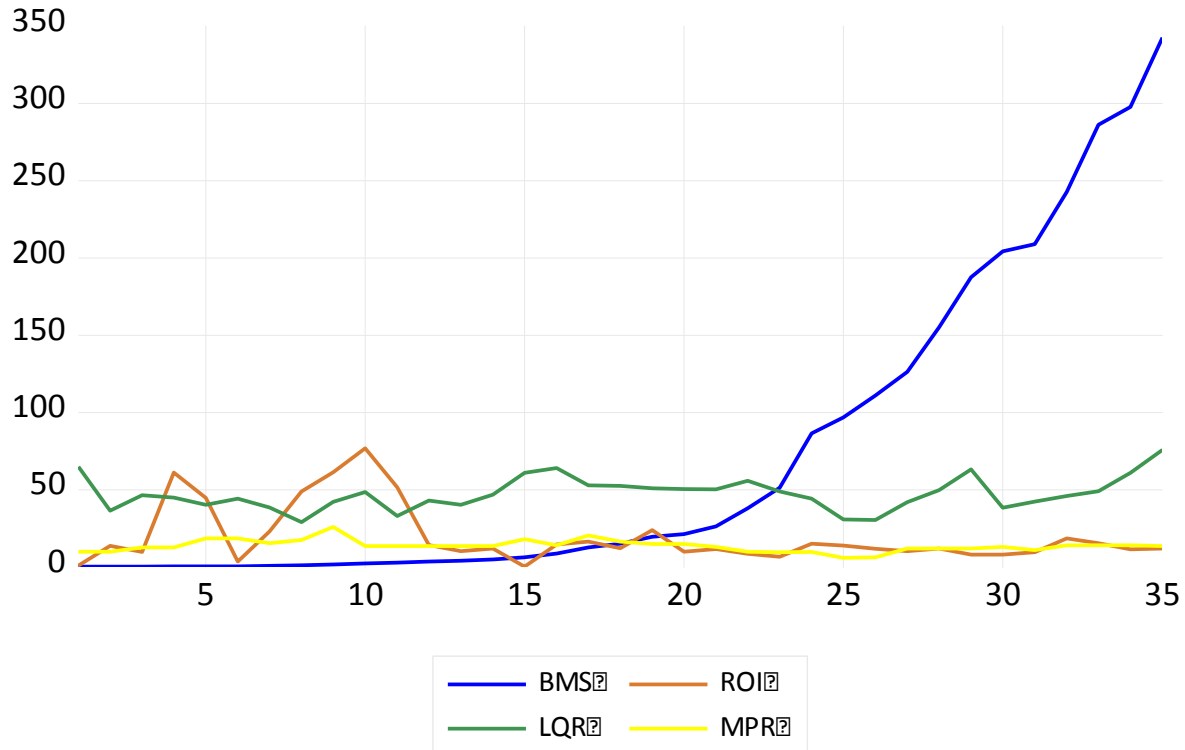
Figure 1: A Priori Plot of the series showing the trend

Figure 1 shows a priori plot of the four variables showing the trend. The non stationarity of the BMS variable can be obviously inferred from the upward and deviated trend of the plot. The RoI tends to shoot away at some specific points while the MPR and LQR have little or no deviation.

Using the plot trend alone may not be satisfactory enough to conclude stationarity test. As a confirmatory test, the series were thus subjected to a the Augmented Dickey Fuller (ADF) stationarity test. The essence was to determine the basis for employing the ARDL model in the work in accordance with Menegaki (2019) which stipulates that the method can be applied on time series stationary at levels I(0) and series stationary at first difference I(1). The ADF test was carried out sequentially on the four variables using the Unit Root Test provided by Eviews 11.0. Each variable was tested under four different conditions which are: At level with intercept, At Level with intercept and trend, 1st Difference with intercept and 1st Difference with intercept and trend. The essence was to double check on the results. The findings of the ADF test is presented in Table 2 and justifies the use of the ARDL approach in the work.

Table 2: ADF Stationarity Test Result

Variables	Level		1st Differencing		
	C (Intercept)	C & T (Intercept & Trend)	C (Intercept)	C & T (Intercept & Trend)	Outcome
BMS	1.0000	1.0000	0.9626	0.0007	Stationary at 1st differencing with intercept & Trend
LQR	0.0358	0.0000	0.0560	0.0000	Stationary at level and stationary at

					1st differencing
MPR	0.0296	0.0000	0.0507	0.0000	stationary at level and stationary at 1st differencing
ROI	0.6888	0.0911	0.0001	0.0007	Stationary at 1st Difference with intercept

The results reveal that two of the variables (LQR and MPR) were stationary at level while the other two (BMS and RoI) were stationary at 1st difference.

Using the Akaike model selection approach, the selected model for the ARDL was (4,4,4,3). Dependent variable (RoI) was 4, MPR was 4, LQR was also 4 while BMS was 3. Figure 2 shows how the model was selected. The best model is the least which is 4,4,4,3 as shown.

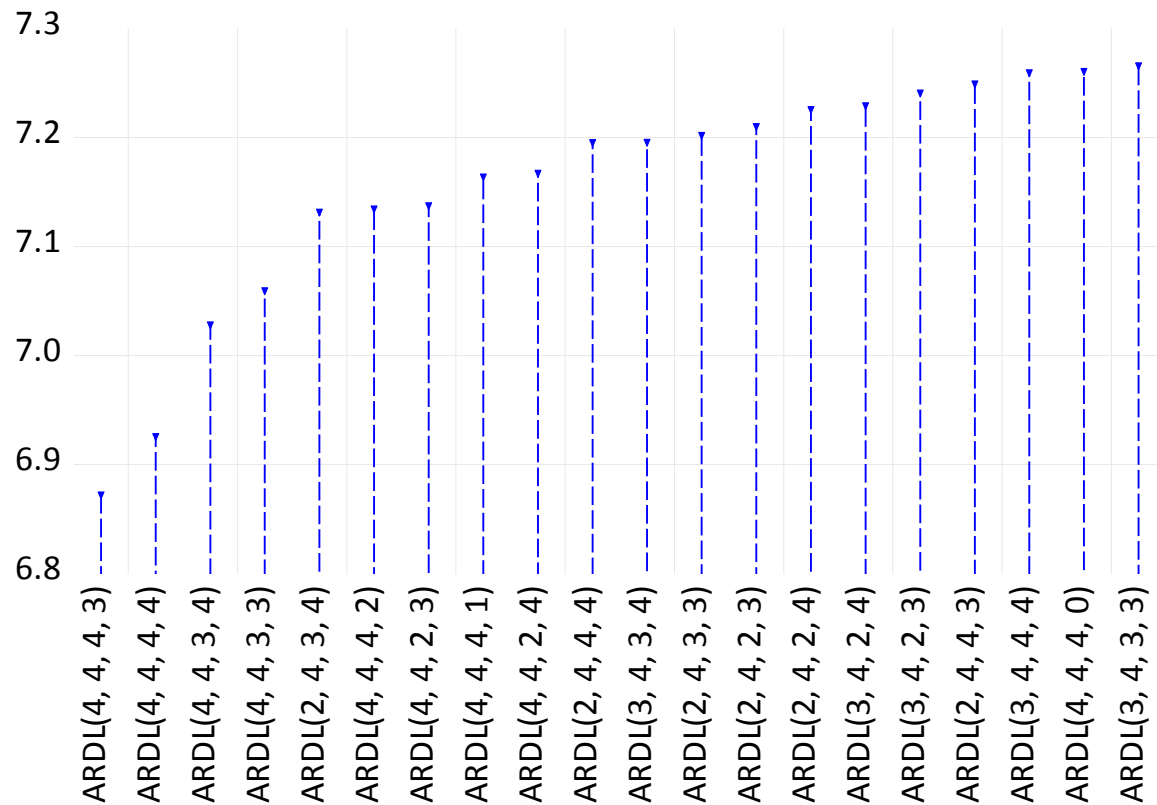## Akaike Information Criteria (top 20 models)

Figure 2: Model Selection Using Akaike Approach

The result of the short run test for is shown in Table 3 below:

Table 3: Result of Short run Test

Dependent Variable: ROI
Method: ARDL
Date: 05/03/21   Time: 12:53
Sample (adjusted): 5 35
Included observations: 31 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): MPR LQR BMS
Fixed regressors: C
Number of models evaluated: 500
Selected Model: ARDL(4, 4, 4, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROI(-1)	0.553020	0.135832	4.071361	0.0015
ROI(-2)	-0.832410	0.153981	-5.405922	0.0002
ROI(-3)	0.199787	0.148251	1.347626	0.2027
ROI(-4)	-0.360597	0.128397	-2.808456	0.0158
MPR	0.209839	0.517167	0.405747	0.6921
MPR(-1)	2.261743	0.481313	4.699110	0.0005
MPR(-2)	1.013069	0.545076	1.858581	0.0878
MPR(-3)	0.827968	0.557114	1.486172	0.1630
MPR(-4)	1.477246	0.501013	2.948519	0.0122
LQR	-0.598439	0.195265	-3.064755	0.0098
LQR(-1)	-0.384155	0.234273	-1.639773	0.1270
LQR(-2)	-0.687368	0.227757	-3.017988	0.0107
LQR(-3)	-0.341714	0.258216	-1.323367	0.2104
LQR(-4)	-0.392241	0.211654	-1.853219	0.0886
BMS	0.389584	0.172212	2.262236	0.0430
BMS(-1)	-0.487239	0.226586	-2.150353	0.0526
BMS(-2)	0.569853	0.245627	2.319990	0.0388
BMS(-3)	-0.542757	0.252121	-2.152762	0.0524
C	55.25027	22.85899	2.417004	0.0325

R-squared	0.946787	Mean dependent var		19.22548
Adjusted R-squared	0.866968	S.D. dependent var		17.94689
S.E. of regression	6.545868	Akaike info criterion		6.872271
Sum squared resid	514.1807	Schwarz criterion		7.751166
Log likelihood	-87.52020	Hannan-Quinn criter.		7.158769
F-statistic	11.86165	Durbin-Watson stat		2.960969
Prob(F-statistic)	0.000047			

*Note: p-values and any subsequent tests do not account for model
     selection.

From Table 3, the probability values are used to determine the variables that are significant in the short run test. Variables having probability values that are less than 0.05 are regarded as being significant. It can be seen that LQR with probability value as 0.0098, BMS with 0.0430 probability value and MPR with probability of 0.0005 are significant in the short run test. The R-squared was 0.9467 while the adjusted R-squared was 0.8669 which indicates that the model is at best fit. The probability of F statistics was reported at 0.000047 which is less than 0.00500 indicating that the model

is significant. It can be seen that If LQR is increased by 1%, then the inflation rate (RoI) will reduce by 0.5984 in the short run. Similary, if BMS is increased by 1%, then the inflation rate (RoI) will also increase by the value 0.3895 in the short run, while if MPR increases by 1%, the RoI increases by 2.2617 in the short run.

In order to carry out the long run test on the data, the Bounds test was employed. The long run test identifies the effect of the variables on inflation rate (RoI). Table 4 shows a summary of the findings.

Table 4: Result of Long Run Test

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPR	4.020179	0.615045	6.536395	0.0000
LQR	-1.669155	0.167405	-9.970753	0.0000
BMS	-0.048993	0.035852	-1.366525	0.1968
C	38.36290	12.01598	3.192658	0.0077

EC = ROI - (4.0202*MPR -1.6692*LQR -0.0490*BMS + 38.3629)

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	10.72687	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	31	Finite Sample: n=35		
		10%	2.618	3.532
		5%	3.164	4.194
		1%	4.428	5.816

The result in Table 4 shows that our computed F-statistics (10.73) is greater than the upper bound (3.67) at 5% level of significance; hence we conclude that indeed there exists a long run relationship between the variables. A closer look also reveals that among the independent variables, only MPR and LQR are significant with probabilities of 0.0000 respectively which is less than 0.05, thus both variables have a long run relationship with rate of inflation (RoI). The broad money supply-BMS has probability of 0.1968 which is greater than 0.05 as such is insignificant. The implication of the long run test is that from the coefficients, both MPR and LQR all have a significant effect on inflation rate at the long run. If liquidity ratio is increased by 1%, inflation rate reduces by 1.7. Similarly, if MPR is increased by 1% inflation increases by 4.02 at the long run.

Summary and Conclusion

In this study, we analyzed the influence of monetary policy on inflation in Nigeria. A look at the short run analysis it can be seen that a percentage increase in liquidity ratio-LQR reduces inflation by 0.5984 in the short run. Similary, if BMS is increased by 1%, then the rate of inflation (RoI) will also increase by the value 0.3895 in the short run, while if MPR increases by 1%, the RoI increases by 2.2617 in the short run. In the long run test, the analysis shows that broad money supply is not significant when it comes to inflation, while liquidity ratio and monetary policy ratio are significant. This study reveals that an increase in MPR increases inflation both at long and short run. This is contrary to the monetary theory which opines that an increase in MPR brings about a reduction in inflation. The implication of this could be related to the fact that an increase in MPR affects the amount of money by way of credit in the hands of manufacturers. If money is not available for operations expenses, it reduces the quantity of products in the market and aggregate demand will now surpass aggregate supply as such triggers demand-pull inflation. The study equally revealed that broad money supply - BMS can only influence inflation at the short run and not at the long run.

The researchers are of the opinion that the Central Bank of Nigeria should do a review of their monetary policy based on the revelation of this study, particularly in the area of Broad money Supply- BMS.

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