



## Examining the Impact of the Mainstream Central Bank Monetary Policy on Inflation in Nigeria: A Case for an Islamic Approach

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### Abstract

*The study examines the impact of the mainstream Central Bank monetary policy on inflation in Nigeria while making a case for an Islamic approach. To document the study, secondary data from 2018-2023 (M1:2018 to M7:2023) were obtained from the database of Central Bank of Nigeria and National Bureau of Statistics. The key variables used include, inflation rate (INFL), Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR) and Prime Lending rate (PLR). Descriptive and econometric tool specifically the ARDL model was employed. Finding reveals that all the series with the exception of MPR was stationary at their first differences and there exists no long-run relationship. More so, MPR and CRR have a positive relationship to inflation thus making the policy to be ineffective while PLR which recorded an inverse relationship to inflation which is consistent with a priori expectation. Furthermore, with the current state, the study justifies that the application of Islamic monetary policy will assist in bridging the disconnect between the real and monetary sector, while eliminating interest, discourage idle funds and restore the value of money which by extension will boost production, investment, employment and reduce price level. The study concludes that the current monetary policy has failed to yield the desired results which necessitate the need for an Islamic approach. Recommendations were suggested as thus; the Central Bank of Nigeria (CBN) needs to apply the instruments of Islamic monetary policy so as to buffer the existing instruments in order to have a robust monetary policy aimed at tackling inflation. The CBN should also encourage banking institutions to adequately support the real sector of the economy.*

### Keywords:

Inflation

Monetary Policy Rate

Cash Reserve Ratio

Prime Lending Rate

ARDL

### JEL Classification:

E5, E50, E55, Q2, Q21

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## 1. Introduction

Globally, every economy, including Nigeria, aspires for macroeconomic stability, notably in terms of gross domestic product (GDP) growth, full employment, price and exchange rate stability, and a favourable balance of payments (BOP). The Central Bank of Nigeria (CBN) and other financial institutions play an important role in achieving these macroeconomic goals. But, the current trend of these indicators, particularly the instability of the price level, has become a matter of critical importance to stakeholders.

This upward trend in the price level is linked to both external and internal sources. For instance, the 2008 global financial meltdown, the COVID-19 pandemic, and the Ukraine-Russia war among others were categorized as external sources, whereas domestic insecurity, exchange rate issues, low production output, low level of technology, industrialization, and poor governance, to mention but a few are considered as internal sources. This has affected the supply sides of food and non-food items thus, creating a condition of excess aggregate demand over supply (Anyanwu, 2010; United Nation Conference on Trade and Development, 2023; International Monetary Fund, 2022).

In Nigeria, as at 2022 the inflation rate was 18.91 per cent as against 2021 when it was 11.54 per cent and as at the end of August 2023 it recorded about 25.80 per cent (CBN, 2023). This increase is considered among the highest in the country for over 17 years and with such nature of inflation, it has an implication on the growth of the economy as well as other economic agents. To combat this scourge, the Central Bank has been reviewing its monetary policy rates at various intervals which largely bows down to the control of interest rate. Though, this review can either be to tighten the economy or otherwise which is considered as either contractionary or expansionary monetary policy.

Consequently, the Central Bank's policy stance has been tilted toward a contractionary

monetary policy across the time. At the last outcome of the 149 CBN monetary policy meeting, the following decisions were taken as thus; MPR was raised by 25 basis point which was from 18.50 per cent to 18.75 per cent, while retaining liquidity ratio and cash reserve ratio at 30 per cent and 32.5 per cent respectively (CBN, 2023).

Despite, these series of review of the mainstream monetary policy rates, the level of inflation is still on the increase. In the words of Manuela Moschella “*that using monetary policy to control inflation is a blunt tool. it ends up affecting everyone by increasing the cost of money for both households and businesses if the interest rate are hiked*”. This raises the question of whether the interest rate review, which is related to these monetary policy rates, can effectively control the inflation rate.

Furthermore, various literatures have been conducted on the theme, including works by Musa and Amuta (2021), Ezeaneji et al (2021), Henry and Sabo (2020), Abille and Mpure (2020), Okotori and Eze (2020), Opeyemi (2018), and others. However, few of these studies have focused on the relationship between mainstream monetary policy and inflation, while arguing for an Islamic monetary approach. Also, previous studies used either quarterly or annual data that ended in 2019, thus creating a data gap that this current study attempts to fill by using monthly data up to M7:2023. Therefore, it is against these vacuums that necessitate the need for this study.

## 2. Literature review

### 2.1 Conceptual review

**Monetary Policy:** There are different definition of the concept of monetary policy presented by different economists. Harry (1962) sees it as a policy employing central bank's control of the supply of money as an instrument of achieving the objectives of general economic policy. Adesoye, et al (2012) sees monetary policy also

refers as 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’s macroeconomic objectives”. These objectives include: economic growth, price stabilization, Balance of Payment Equilibrium, Employment generation and exchange rate stability.

More so, Babatunde and Kehinde (2016), monetary policy is one of the macroeconomic instruments with which the Central Bank employed in the management of the economy to attain fundamental objectives of price stability, maintenance of balance of payments equilibrium, and promotion of employment, output growth and sustainable development. According to the Central Bank of Nigeria (2012), monetary policy is the specific actions of the Central Bank to regulate the quantity and availability of credit in the economy, in order to achieve some predetermined macroeconomic goals.

Monetary policy is divided into two, namely; contractionary and expansionary. Contractionary or restrictive monetary policy is used by the central bank to overcome inflationary gaps in an economy and vice versa. Consequently, the instruments of monetary policy include the following: Quantitative and Qualitative instruments. The quantitative instruments includes the open market operations, discount rate or bank rate, cash reserve ratio whereas the qualitative instruments capture credit rationing, moral suasion, direct controls (Dwivedi, 2006). Therefore, this study operationalise the definition of the CBN (2012) and considered instruments such as MPR, CRR, PLR since they are the major focus by the CBN to curtail inflation.

### *Inflation*

The monetarist school of thought led by Milton Friedman (1942) posits that inflation is “*always and everywhere a monetary phenomenon and that it is everywhere since increases in the*

*quantity of money always exceeds output*”. Chukwuemeka (2018), inflation is defined as a “continuous and general rise in price level of goods and services in an economy over a given period of time.”

According to Ishola (2010) inflation is ‘an increase in the volume of money and credit relative to the available goods and services, resulting in a substantial and persistent rise in the general price level’. In addition, the Central Bank of Nigeria, (n.d.) see it as an economic situation where there is a general rise in the prices of goods and services continuous. However, inflation as measured by the consumer price index, whole sale price index and GDP deflator. Consequently, to operationalise this concept, the study adopted the definition of Central Bank of Nigeria and the consumer price index is to serve as a proxy to inflation (Ishola, 2010).

## **2.2. Theoretical Framework**

### *Quantity Theory of Money*

Irving Fisher was one of the first to formulate this idea in 1956, arguing that there is a direct proportionate relationship between money supply and price level. The theory is based on certain assumptions which include the following: The velocity of money, or the pace at which money circulates in the economy, is constant and is determined by the type of population, trading facilities, interest rates, and investment opportunities. The volume of goods and services in the economy is constant, prices do not play an active role and all transactions to be monetary in nature. As a result, money is the exclusive medium of exchange, and no one accumulates or hoards it (Sharma, 2023). To buttress, his argument he developed the fisher equation which is expressed as thus:

$$MV = PT$$

where: M is the total money supply, V: velocity of money in circulation, T : Volume of

transactions,  $P$ : general price level. Therefore, if  $V$  (the velocity of money) and  $T$  (the total output) are assumed to be constant, a change in the money supply ( $M$ ) will result to a proportional change in the price level. However,  $M$  is the policy variable that is determined exogenously by the Central Banks. However, the Fisher viewpoint has been heavily criticized due to a gap between its assumptions and reality.

The Cambridge version of the Quantity Theory deviated from Fisher's beliefs by emphasizing that doubling the money supply will not result in double prices (Ishola, 2010). Although, the theory is relevant because it exposes the relationship between money supply, which is heavily determined by monetary indicators such as MPR, CRR, PLR, and others, and inflation.

### 2.3 Empirical Literature

Several literatures have been conducted on the nexus between monetary policy and inflation within Nigeria and across the globe. Okotori and Eze (2020) examined the relationship between CBN monetary and inflation while employing the VECM model which reveal that money supply, exchange rate, treasury bill rate have a positive impact on inflation rate while monetary policy rate and reserve requirement have an inverse relationship to inflation, thus making the study to draw a conclusion that the variables under consideration have significant impact on inflation during the period considered. On the contrary, Ngerebo (2016) in his study on the impact of monetary policy and inflation in Nigeria concluded that MLR, TBR, MPR, NDC and PLR were found to be insignificant where as NCG, M1g, CPS, M1g, and SR were significant on inflation. Also, Ujuju and Etale (2016) applied OLS model in their study which revealed that there exist a linear relationship between CRR, MLR and inflation while interest rate and liquidity ratio is an exception which concluded that the instruments has no significant impact on controlling inflation in Nigeria.

Musa and Amuta (2021) in a similar study conducted in Nigeria on the effect of monetary policy on inflation while adopted ARDL model and data set from 1986 to 2019 revealed that interest rate and exchange rate have a significant effect on inflation in both short and long run period but on the contrary in the case of monetary policy rate as it is significant only in the short run. Also, Opeyemi (2018) carried out a study on monetary policy and the control of inflation while employing ECM model revealed that interest and money supply are statistically significant while compared to exchange change the impact is weak. And thus, concluded that the monetary policy has been partially ineffective under the period considered.

Similar study was carried out in South Africa by Von Wyngard et al (2018) while employing ARDL alongside with quarterly data stressed that money supply, government expenditure and interest rate has a positive relationship to inflation possesses both short run whereas trade openness is on the contrary but in the long run interest rate, trade openness and government expenditure has a negative relationship except for money supply, therefore, concluded that monetary policy has been less effective and thus revealed that, there exist a structural and cost push inflation. Salunkhe and Patnaik (2017) in their study in India revealed that there exist a bidirectional relationship, also output gap has a positive relationship to inflation and it only existed in the short and medium run and by conclusion, inflation within 6-9 per cent is needed.

In Ghana, similar study was carried out by Abille and Mpure (2020) using ARDL model and he reveals that money supply has a linear relationship with inflation only in the longrun condition, but in the short run, the reverse is the case. Using ECM, folorunsho and Abiola (2020) in their studies stressed that money supply and exchange rate has a positive impact on inflation. In a similar view, Emmanuel (2020) carried out

a study on the effectiveness of monetary policy in Nigeria revealed that domestic credit, money supply, GDP and exchange rate have a positive relationship with inflation in Nigeria under the period.

Henry and Sabo (2020) conducted similar study while applying the ARDL model discovered that monetary policy rate and exchange rate has an inverse relationship to inflation but on the contrary when compared to broad money supply. More so, Ezeaneji *et al* (2021) examined monetary policy and inflation control while employing ECM, reveals the MS and exchange rate has an inverse relationship with inflation both in short and long run but its an significant whereas TB rate has a statistically significant negative relationship in the short run but on the contrary in long run and hence, concluded that monetary policy has no significant effect on inflation under the period.

Using VAR model, Akadiri and Ekundayo (2017) stressed that money supply has no significant impact on inflation. However, Ogunmuyiwa and Babatunde (2017) while using ARDL model shows that narrow money and interest rate have significant impact on inflation in both short and long run period, and thus concluded that monetary policy has impact on inflation under the period considered. Subsequently, Akundutire, Ogunyemi and Adodo (2019), while adopting ECM model concluded that money supply and interest rate were significant in explaining inflation with the exception of exchange rate which is insignificant.

Bank-ola, Jemiluyi and Johnson (2020) examined the nexus between monetary policy instruments and price stability in Nigeria adopted the ARDL model. They stressed that CRR has a positive connection to inflation likewise import but it was not significant whereas LR, exchange rate and MS posses an insignificant negative relationship, thus concluding that the monetary policy has not succeeded in ensuring price

stability. In a similar vein, Ibrahim and David (2022) conducted a study on how effective monetary policy tools in controlling inflation in Nigeria applied the ARDL model, which revealed that MPR have insignificant impact on inflation but TB rates and LR were significant at short and long run. Thus, concluding that the monetary policy has not been effective,

Furthermore, Hossain (2017) conducted a study on Malaysia using VECM discovered that money supply is a significant fact that spur inflation. Likewise, Chaudhry, Ismail, Farooq and Murtaza (2015) using ADRL model concluded that interest rate and money supply are the key driver of inflation in Pakistan during the period under consideration. But a different outcome was discovered from the works of Bonga-Bonga (2017) while employing SVECM stressed that monetary policy shock has not significantly control inflation in South Africa.

Therefore, gaps were identified from the literature which depicts that most of the studies were skewed towards the role or effectiveness of monetary policy most especially the conventional tools as little have been documented on making a case of Islamic monetary policy in combating inflation. More so, most of the studies employed an annual data which stood at 2019 thus creating a literature gap, which this study tends to fill by applying monthly data up to M7:2023.

### 3. Methodology

A quantitative method was used, accompanied with monthly data from M1:2018-M7:2023 which was obtained from the database of the Central Bank of Nigeria and National Bureau of Statistics. The choice of this data is against the backdrop that it captures major spikes of inflationary rates and reviews of monetary policy rates. However, other sources of data or information include related textbooks, journals, magazines, and websites. Key variables used include the inflation rate, monetary policy rate

(MPR), cash reserve ratio (CRR), prime lending rate (PLR) which were measured in percentages (%) and was adapted from the works of Ujuju and Etale (2016). In addition, Islamic variables were not dummied and liquidity ratio was not incorporated in the model due to their non-variability over the period considered for the

study. Furthermore, descriptive statistics and econometric methods such as the unit root, Autoregressive Distributive Lag (ARDL) Model, and Granger causality test were used to analyze the data at the 0.05 level of significance. Consequently, the generalized ARDL model can be specified as thus;

$$\Delta Y_t = \beta_0 + \sum_{i=1}^n \beta_i \Delta Y_{t-i} + \sum_{i=0}^n \lambda_i \Delta X_{t-i} + \theta_1 Y_{t-1} + \theta_2 X_{t-1} + \mu_t \quad 1$$

This can be re-written as thus:

$$\begin{aligned} \Delta LINFL_t = & \beta_0 + \sum_{i=1}^n \beta_i \Delta LINFL_{t-i} + \sum_{i=0}^n \lambda_i \Delta LMPR_{t-i} + \lambda_2 \Delta LCRR_{t-i} + \lambda_3 \Delta LPLR_{t-i} + \theta_1 LMPR_{t-1} \\ & + \theta_2 LCRR_{t-1} + \theta_3 LPLR_{t-1} + \mu_t \end{aligned} \quad 2$$

Where:  $\beta_i$ ,  $\lambda_i$ : Short-run coefficients,  $\theta_1$ ,  $\theta_2$ : ARDL long-run Coefficients;  $\mu_t$ : Disturbance term. LINFL: Inflation. MPR: Monetary Policy Rate. CRR: Cash Reserve Ratio. PLR: Prime Lending Rate. Having specifying the ARDL model, pre-testing was conducted in order to ascertain the optimal lag length and the appropriate model.

#### 4. Result and Discussions

##### 4.1 Pre-estimation Test

Table 1 shows the various optimal lag selection criterion which includes LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion. However, all the lag length criterion (LR, FPE, AIC, SC and HC) opted for the optimal lag is one (1) and as such lag one (1) is adopted for this study.

**Table 1. Optimal Lag Length Selection**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	216.5965	NA	9.83E-09	-7.08655	-6.94693	-7.03194
1	337.4247	221.5184*	2.99e-10*	-10.58082*	-9.882708*	-10.30775*
2	343.5173	10.35751	4.19E-10	-10.2506	-8.99397	-9.75905
3	348.723	8.155562	6.12E-10	-9.89077	-8.07567	-9.18078
4	356.0698	10.53036	8.46E-10	-9.60233	-7.22874	-8.67388
5	367.1475	14.40107	1.06E-09	-9.43825	-6.50617	-8.29135

Source: Eviews 10

\* indicates lag order selected by the criterion

##### 4.1.2 Unit Root Test

The Augmented Dickey Fuller (ADF) and the Philip Perron unit root test was conducted to determine the order of integration which is presented in Table 2. Table 2 depicts the results

of unit root test for ADF and PP conducted, at 5% level of significance. It reveals that series of LINFL, LCRR and LPLR are stationary at their first difference 1(1) or are integrated of order one

I (1) except for LMPR which is stationary at levels I(0). The outcome for MPR is attributed to the fact that it has a minimum variation around its mean. By this outcome, it depicts a mixture of order of integration i.e., I(0) and I(1) which, gave credence to the application of Autoregressive Distributive Lag (ARDL) model as supported by the works of Pesaran, Shin and Smith (2001). Having established the variables are stationary at different levels [I(0) and I(1)], it is cogent to

ascertain whether or not there exist a long-run relationship among the variables. Thus, the ARDL bound test for integration was conducted as shown in Table 3.

#### 4.2 Descriptive Statistics

This test is conducted to present a summary statistic of the variables under consideration which include inflation, monetary policy rate, cash reserve ratio, prime lending rate.

**Table 2. Unit Root Test Result**

Variable	ADF		PP		Order of Integration	Decision
	Level	First Diff	Level	First Diff		
LINFL	-	-8.364 0.000**	-	-8.588 0.000**	I(1)	Stationary
LMPR	-2.977 0.043**	-	-3.025 0.038**	-	I(0)	Stationary
LCRR	-	-9.662 0.000**	-	-9.778 0.000**	I(1)	Stationary
LPLR	-	-9.487 0.000**	-	-9.504 0.000**	I(1)	Stationary

Source: Eviews 10

Table 3 reveals that the summary of the descriptive statistics of the series. LINFL, LMPR, LCRR and LPLR are positively skewed. The positive skewness shows that the data spread from the right-hand side of the normal curve. On the kurtosis, INFL, LMPR, LCRR, and LPLR are

platykurtic because its kurtosis values are less than 3 respectively. Jarque-Bera test for normality, shows that all the variables are normally distributed because their respective p-values are greater than 5 per cent (Asteriou and Hall, 2011).

**Table 3. Descriptive Statistics**

	LINFL	LMPR	LCRR	LPLR
Mean	2.701963	2.600886	3.268363	2.62225
Median	2.70069	2.60269	3.314186	2.636912
Maximum	3.181382	2.931194	3.48124	2.903069
Minimum	2.399712	2.442347	3.113515	2.409644
Std. Dev.	0.248233	0.140388	0.133284	0.153965
Skewness	0.327734	0.736185	0.132295	0.098715
Kurtosis	1.725669	2.930782	1.836413	1.545258
Jarque-Bera	5.56172	5.8843	3.856508	5.837145

Probability	0.061985	0.052752	0.145402	0.054011
Observations	65	65	65	65

Source: Eviews 10

#### 4.3 ARDL Bound Test for Co-integration

This test was conducted to determine whether or not there is cointegration or long-run relationship among the series or variables as shown in Table 3. Table 4 shows the ARDL co-integration test of whether or not there exists a long run relationship among the series. However, the result depicts that there is no long-run relationship under the period review. This is because F-statistic (2.289) is less than both the lower critical bounds values of I (0) and higher critical bound values I (1) at 5 per cent level of significance. Hence the need for only the ARDL-Short run estimates test as shown in Table 4.

Table 5 depicts the ARDL coefficients of the series. Previous inflation (LINFL) has a positive relationship with the current inflation as a percentage change in the former will result to 78 per cent increase in the current inflation which is supported by a p-value less than 5per cent. The coefficient of Monetary policy rate (LMPR) is statistically significant because it has a p-value less than 5 per cent. Its relationship is positive to inflation which implies that a percentage increase

or decrease in LMPR will result to 46 per cent increase or decrease in the level of inflation. This is contrary to economic theory because an increase in MPR rate for instance is supposed to tightening money supply by increasing the cost of lending so as to discourage lending by economic agents which will facilitate a reduction in inflationary pressure but the reverse is the case. This contradicts works of Ibrahim and David (2022), Musa and Amuta (2021), Henry and Sabo (2020), Okotori and Eze (2020) which stressed that MPR rate has an inverse relationship with inflation. However, the outcome from the current study is valid owing to the fact that despite the increase in MPR by the Central Bank of Nigeria over the period, it has unable to reduce the inflation rate because inflation is still on the increase. This further reveal that the inflation in Nigeria is not a monetary phenomenon but rather attributable to the structural imbalances and other factors earlier mentioned as such by extension made monetary policy ineffective.

**Table 4. ARDL Bound Test for Cointegration Test Results**

Test Statistic	Value	K
<b>F-statistic</b>	2.289	3
Critical Value Bounds		
Significance	<b>I(0) Bound</b>	<b>I(1) Bound</b>
<b>10%</b>	2.492	3.35
<b>5%</b>	2.976	3.896
<b>1%</b>	4.056	5.158

Source: Eviews 10 Output

Also, cash reserve ratio (LCRR) has a positive relation to inflation and it is statistically significance because its p-value is less than 5 per

cent. This means that a percentage increase LCRR will result to 88 percent increase in Inflation and vice versa. This outcome is in line



with the works of Bank-ola, Jemiluyi and Johnson (2020) and Ujuju and Etale (2016) which reported that CRR and MRR has a positive relationship to inflation. This outcome further contradicts a priori expectation because an increase in CRR is to tightened loanable funds with DMB and thus reduce money supply in order to curb inflation. This further revealed the fact that probably the DMB are not in full control of the money supply in economy, as supported by the CBN that about N2.73Trillion out of the N3.23Trillion currency as of September 2022 in circulation is out of the Deposit Money Banks vaults (CBN, 2022). Consequently, any upward review of the CRR by the CBN, will increase the inflation rate because DMB will end up increasing the cost of loanable of funds which will invariably spur the prices of goods and services.

More so, the coefficient of prime lending rate (LPLR) possesses an inverse relationship with inflation under the period considered and it is statistically significant because it has t-value greater than 2 and p-value less than 5 percent. This outcome contradicts with the works of Ngerebo (2016) which concluded that PLR were found to be insignificant to inflation. However, the outcome is valid within the context of Nigeria because it implies that if LPLR decreases by a percentage, inflation increases by 29 per cent. Technically, if LPLR is reduced, it will have a spill over effect on cost of lending as this will attract more borrowers to secure funds, thus increasing the money supply and if probably such funds is not invested in critical sectors, then output will be affected which will result to more money against few goods, thereby creating inflationary tendencies.

**Table 5. ARDL Estimates**

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LINFL(-1)	0.781767	0.061591	12.69289	0
LMPR	0.460971	0.16998	2.71191	0.0088
LMPR(-1)	-0.231329	0.156377	-1.479302	0.1446
LCRR	0.879541	0.346266	2.540073	0.0138
LCRR(-1)	-0.787041	0.355753	-2.212324	0.031
LPLR	-0.294035	0.144588	-2.033606	0.0467
C	0.458512	0.389858	1.176102	0.2444
R-squared	0.947017	Mean dependent var		2.696012
Adjusted R-squared	0.94144	S.D. dependent var		0.245478
S.E. of regression	0.059403	Akaike info criterion		-2.70601
Sum squared resid	0.20114	Schwarz criterion		-2.46988
Log likelihood	93.59237	Hannan-Quinn criter.		-2.61299
F-statistic	169.8045	Durbin-Watson stat		1.784488
Prob(F-statistic)	0			

Source: Eviews 10

Furthermore, the adjusted R-squared is 0.94 which implies that 94 percent variation in inflation is accounted by the explanatory variables. The F-ratio is significant and implies

that the model is adequate in explaining variation in INFL during the period under review and it is further confirmed by p-value less than 5 per cent. Also, DW-statistic is 1.8 which is a further

confirmation that there is no autocorrelation. This is against the backdrop of the rule of thumb which state, DW test statistic values is relatively normal if it's between 1.5 to 2.5 but outside this range could be cause for concern. Field (2019) suggests that values under 1 or more than 3 are a definite cause for concern.

#### 4.4. Diagnostic Testing

The following diagnostic test was conducted to check for the heteroscedasticity and serial correlation of the model. Table 6 shows the

diagnostic test of the model. The result revealed that the ARDL model is free from serial-correlation, and Heteroscedasticity because all these tests conducted have their p-value(s) greater than 0.05, which implies the acceptance of null hypothesis that there is no serial correlation and homoscedasticity is present (the residuals are distributed with equal variance). Furthermore, to check the stability of the model, the cumulative sum of recursive residuals -CUSUM test were conducted as displayed in figure 1.

**Table 6. ARDL Diagnostic Results**

Test Statistic	Result
Serial Correlation $\chi^2(2)$ :	0.903 [0.346]
Heteroscedasticity $\chi^2(2)$	0.975 [0.450]

Source: EViews 10 Output

From the figure 1, it clearly shows that the model is stable since the CONSUM Squares plots is within the lower and upper bounds as against a scenario if the plots of the CUSUM break in the lower or upper bounds, then such a parameter is said to be unstable (Tang and Lean, 2007).

#### 4.5. A Case for an Islamic Approach

Taking a cursory look at the findings from the mainstream CBN monetary policy rates in curtailing inflation, it depicts that the monetary policy has failed to achieved or has not been effective under the reviewed period which is further supported by various empirical studies in Nigeria. Among which include Bank-ola, Jemiluyi and Johnson (2020), Ngerebo (2016),

Ujuju and Etale (2016), Opeyemi (2018). This further re-iterate the fact that MPR rate which is by extension considered as interest rate has not been effective in controlling inflation in the Nigeria context. This call for an alternative which is refer to as an Islamic monetary policy. By Islamic Monetary policy, according to Ahmad (2008) refers to “ a catch all name for monetary control and management, regulation of commercial bank and management of money market in the economy. In other words, it can be seen as Islamic Monetary policy can be refer to as a deliberate effort by the monetary authorizes to direct the cost, volume and direction of money supply and finances in accordance with the shariah in order to achieve certain Islamic macro-economic objectives.

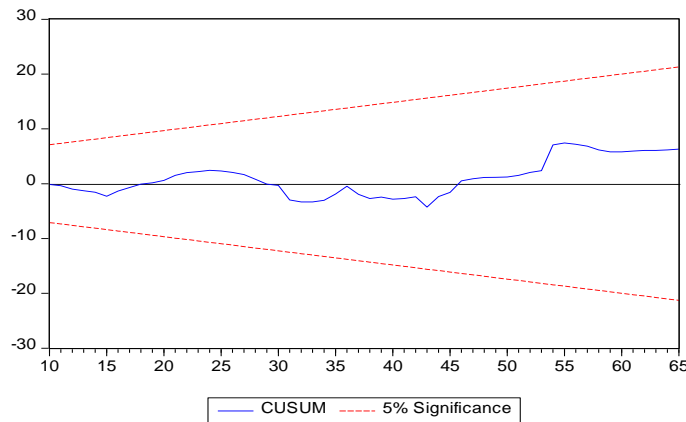


Figure 1: CUSUM Test

Source: Eviews 10

By this definition, the Islamic monetary policy works in accordance with the shariah and the shariah has prohibits interest in all its sources. In the glorious Quran, it has been prohibited in about 12 different verses. Among which include: *“Those who eat Riba (Usury) will not stand (on the day of resurrection) except like the standing of a person beaten by shaitan (Satan) leading him to insanity. That is because they said; Trading is only like riba”* whereas Allah has permitted trading and forbidden riba; so who so ever recieves admonition from his lord and stops eating riba (usury) shall not be punished for the past, his case is for Allah (to Judge) but whoever returns to riba, such are the dwellers of the fire-they will abide therein.” (Q 2:275).

Additionally, Jabir bin Abdullahi also reported that *The messenger of Allah (PBUH) cursed the recipient of usury and its giver, and the one who records it, and the two witnesses; and he said: They are all equal (in sin and penalty)”* (Related by Sahih Muslim and at-Tirmidhi) Also, Hazrat Abu Hurayrah (RA) narrated that: *The Prophet, peace be on him, said: "Riba has seventy segments, the least serious is being equivalent to a man committing adultery with his own mother (Ibn Majah).*

Consequently, interest been a key tool of the conventional monetary policy has its implication

in an economy which includes; deepening income inequality, creating inflationary tendencies, encouraging unjust incomes or earnings, encourage markdown of the future, oppression of the needy, encourages economic instability, discourages morale of entrepreneurship and productivity of labour, encourages class conflict among others (Ibrahim, 2016). By so doing, the Islamic monetary policy, seeks to alleviate these issues and pioneered by the following objectives, Economic Prosperity with full job opportunities, Socio-economic justice and distribution of income and wealth, value for money stability and among others (Soemitra et al, 2021). These objectives are facilitated by employing the following Islamic monetary instruments which include:

- i. **Profit sharing ratio:** Under this arrangement profit is shared in accordance with an agreed ratio whereas losses are shared in line with capital invested. This can be increased or decreased depending on the objectives
- ii. **Refinance ratio:** This ratio captures the ratio at which the apex bank will support or finance Islamic banks for the loans in which they have created or advance to its clients
- iii. **Public share of demand deposit:** This has to do with setting aside a proportion of demand deposit by Islamic banks which is to be made

available to the government for the provision socially inclined projects

- iv. ***Qard hassan ratio***: the *Qard hassan* ratio has to do with the proportion of demand deposit of a bank that is set aside for the creation of the *Qard hassan* type of loan.

In addition, some of the following conventional monetary policy instruments can also be applied which include Legal reserve ratio, Credit rationing, Selective Credit control, Moral Suasion and Open Market Operations but such securities must be *Shari'ah* compliance.

#### 4.6 Justification for Islamic Monetary Policy

The application of Islamic monetary policy is aimed at alleviating interest which is considered as a key causal factor to the macro economic issues encounter in the past, present and future if measures are not taken. However, relevant instruments as mentioned earlier have been used as a replacement and by its mode of transmission, it is targeted at the real sector which are better implemented through Islamic financial institutions as they focused more on asset based financing rather than creating a highly debt based structure which is viewed as “bubbles awaiting to burst”. According to Soemitra *et al*, (2021), stressed that there is no dichotomy between the monetary sector and the real sector. Thus, by focusing on the real sector, output will increase, employment will be created, investment will increase and prices of goods and services will decline, thus reducing inflationary tendencies.

Also, under the Islamic monetary policy money is considered as medium of exchange rather than a commodity which can be bought or sold. This is a departure from the conventional monetary policy and as such, the mechanism which money begets its self via the power of interest is considered remote under the Islamic monetary strategy, thus ensuring stability in the value of money

More so, part of the Islamic monetary policy strategy is to ensure the unemployed productive funds are taxed through the zakat mechanism. By so doing, it will discourage individuals from keeping idle funds but rather investing it in critical areas through contracts like *musharakah*, *mudarabah*, *qard hassan* among others which will end up boosting production, reduce price level, employment and zakat will be paid which will invariably assist in redistributing income and wealth.

Lastly, countries that have implemented this policy such as Malaysia and other Muslims countries have recorded huge success in curtailing inflations and this is further supported by empirical studies such as Uddin and Halim, 2015 and Soemitra *et al*, 2021 so Nigeria should not be an exception especially with its rising inflation rate, unemployment and slow economic growth.

#### 5. Conclusion and recommendations

Achieving a low single digit inflation rate is cogent for the growth of the Nigerian economy but based on the finding from this study, the monetary policy rate (MPR) and cash reserve ratio (CRR) have a linear connection to inflation except for prime lending rate (PLR). Therefore, the study concluded that the monetary policy has not be effective under the review period which can be further attributed to the fact that the inflation could be as a result of cost push or structural issues, thereby lending credence to the fact that there is a disconnect between the monetary policy and the real sector. It is against this that necessitate the need for the application of an Islamic monetary policy which will bridge the gap between the real sector and the monetary sector, eliminate the interest rate tools and replace with peculiar instruments which have demonstrated its success story in economies that have applied it.

Consequently, the study recommends the following as thus; firstly, the Central Bank of

Nigeria (CBN) needs to apply the instruments of Islamic monetary policy so as to buffer the existing instruments in order to have a robust monetary policy aim at tackling inflation and other macro-economic objectives. Secondly, both the Government and banking institutions needs to adequately support and develop the real sector of the economy as this would assist to improve production, investment, employment as well as reduce the price levels of goods and services.

Thirdly, the CBN should implement policy aim at incorporating the informal sector and mopping the funds unaccounted for by the DMBs vault especially be relaunching the naira redesign policy but full empowered or support by all electronic banking channels.

## References

- Abille, A. B. & Mpuure, D.M. (2020). Effect of monetary policy on economic growth in Ghana, *Applied Economics Journal*, 27(2), 110-124.
- 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, 1-24.
- Akindutire, O. R, Ogunyemi, J.K. and Adodo, F. L.(2019). Monetary policy and control of inflation in Nigeria. *International Journal of Management, IT & Engineering*, 8(12), 1-13.
- Anyanwu, J.C. (2010). *Monetary Economics: Theory, Policy and Institutions*. Onitsha: Hybrid Publishers LTD. 84-89.
- Babatunde, A.A. and Kehinde, I.V. (2016). The impact of monetary policy on price stability in Nigeria. *Global Journal of Economics and Business Administration*, 1(2), 14-26.
- Bank-ola, R.E., Jemiluyi, O.O and Johnson, A.K (2020). Monetary policy instruments and price stability in nigeria: an ardl bound testing approach. *International Journal of Management, Social Sciences, Peace and Conflict Studies (IJMSSPCS)*, 3(3), 473 – 485.
- Bonga-Bonga, L. (2017). Assessing the effectiveness of the monetary policy instrument during the inflation targeting period in South Africa. *International Journal of Economics and Financial Issues*, 7(4), 1 - 19.
- CBN. (2023). *Central Bank of Nigeria Communique No. 149 of the Monetary Policy Committee meeting held on 24-25<sup>th</sup> July, 2023*. 1-4.
- Central Bank of Nigeria (2012). *Understanding Monetary policy series* No. 16. Non-Interest (Islamic Banking). Abuja. 9.
- Central Bank of Nigeria (2019). *Central Bank of Nigeria Statistical Bulletin*, Abuja, Nigeria.
- Central Bank of Nigeria (2022). *Issuance of New Naira Banknotes*. Press Remarks by Godwin Emefiele, October 26, 2022. 1-13.
- Chaudhry, I.S., Ismail, R., Farooq, F. & Murtaza, G. (2015). Monetary policy and its inflationary pressure in Pakistan. *Pakistan Economic and Social Review*, 53(2), 251-268.
- Chimobi, O. P. & Uche, U. C. (2010). Money, price and output: A causality test for Nigeria, *American Journal of Scientific Research*, 8(2), 78-87.
- Chukwuemeka N. (2018). Monetary policy and price stability in Nigeria (1981-2015). *Journal of Economics and Sustainable Development*, 9(10), 52-57.
- Dania, E.N. (2013). Determinants of inflation in Nigeria (1970 – 2010). *The Business & Management Review*, 3(2), 106-114.
- Danjuma, I., Jibrin, S. M., and Blessing, S. E. (2012). An assessment of the effectiveness of monetary policy in combating inflation pressure on the Nigerian economy. *Erudite Journal of Business Administration and Management*, 1(1), 7-16.

- Ezeaneji, C. I., Obi, C. O., Priscilla, C.I., Frank, U.E. (2021). Monetary policy and inflation control: the case of Nigeria. *European Journal of Management and Marketing studies* 6(2). 128- 150.
- Folorunso, B .A. & Abiola A .G. (2020).The long run determinants of inflation in Nigeria (1970-1998).*The Nigeria Journal of Economics and Social studies*,42 (1) ,37-52.
- Habibullah, M.S. (2019). Monetary policy and inflation in thirteen Asian developing countries. *International Journal of Business and Social Science*, 2(9), 11-21.
- Harry, J.G. (1962). Monetary theory and policy. *Am Eco Rev*, II (3). 335.
- Henry, E A. and Sabo, M.S (2020). Impact of monetary policy on inflation rate in Nigeria: vector autoregressive analysis. *CBN Bullion*, 44(4), 78-90.
- Hossain, A.A (2017). Monetary policy for maintaining low, stable inflation in Malaysia. *Journal of Developing Areas*, 51(2), 388-412.
- Ibrahim A. & David J. (2022). How effective are monetary policy tools in controlling inflation in Nigeria? An empirical investigation. *Timisoara Journal of Economics and Business*, 15(1),| 1–22.
- Ibrahim, M. L (2016). Riba (Usury). A tool that should be carved out of financial transactions. *Turkish Journal of Islamic Economics*, 3(2), 13-24.
- International Monetary Fund (2022). *World economic outlook, April 2022: war set back The global recovery*. Available at: <https://imf.org/en/Publications/WEO>. Retrieved on 25/02/2023.
- Iya, I.B. & Aminu, U. (2014). An empirical analysis if determinants of inflation in Nigeria. *Journal of Economics and Sustainable Development*, 5(1), 140-150.
- Jhingan M.L, (2010). *Macroeconomics Theory*, 12th edition, Vrinda Publications (P) Ltd. Delhi, India.
- Kumapayi, A. A., Nana, J. U. & Ohwofasa, B. O. (2012). Impact of monetary policy on inflation and economic development in Nigeria. Evidence from empirical data. *Asian Journal of Empirical Research*, 2(2), 28-39.
- Maku, A.O. & Adelowokan, O.A. (2013). Dynamic of inflation in Nigeria: An autoregressive approach. *European Journal of Humanities and Social Sciences*, 22(1), 10-51.
- Musa, N & Amuta, O.D (2021). Effects of Monetary policy on inflation in Nigeria. *Interdisciplinary Journal of African & Asian Studies*,7(2), 105-115.
- National Bureau of Statistics (2019), *Annual Abstract of Statistics*, Abuja.
- Odumisor, C. J. (2019). Impact of money supply on the growth of the Nigerian economy (1976 – 2015). *IOSR Journal of Economics and Finance*, 10(1), 30-46
- Odusanya, I.A. & Atanda, A.A. (2010). Analysis of inflation ant its determinants in Nigeria. *Pakistan Journal of Social Sciences*, 7(2), 97-100.
- Okotori, T. & Eze, G (2020). CBN monetary policy and inflation nexus in Nigeria: An empirical approach. *Munich Personal RePEc Archive*. Paper No. 110523, 1-21.
- Okwori, J. & Abu, J., (2017). Monetary policy and inflation targeting in Nigeria. *International Journal of Economics and Financial Management*, 2(3), 1-12.
- Opeyemi, A. (2018). Monetary policy and control of inflation. Doi-10.13/40/RG.2.216788.14722.
- Pesaran, M. Shin, Y. & Smith, J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16, 289–326.
- Salunkhe, B., & Patnaik, A. (2017). The impact of monetary policy on output and inflation in India: A frequency domain analysis. *Economic Annals*, Faculty of Economics – University of Belgrade, 62(212), 113-154.

- Sharma, S. (2023). *What is the Quantity Theory of Money?* Investment Banking resources. Available at: <https://www.wallstreetmojo.com/quantity-theory-of-money/> Retrieved on 01/10/2023.
- Soemitra, A., Ismal, R., Waqqosh, A., Hasibuan, L. H & Pasaella, H (2021). Study of Islamic monetary policy literature: (effectiveness of real sector performance strengthening). *Jurnal Ekonomi Manajemen dan Bisnis*, 22, (2), 52-66.
- Ubi, P.S., Effiom, L. and Eyo, E.I. (2012). Monetary policy and industrialization in an emerging open economy: Lessons from Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 2(8), 270-288.
- United Nation Conference on Trade and Development, (2023). *Multiple Crises unleash one of the lowest global economic output*. Available at: <https://unctad.org/news/multiple-crises-unleash-one-of-the-lowest-global-economic-output-recent-decades-says-un-report/> Retrieved on 25/02/2023.
- Uddin, M.A & Halim, A. (2015). Islamic monetary policy: Is there an alternative of interest rate? *Munich Personal RePEc Archive*, Paper No.67697, 1-26.
- Ujuju, L. E. & Etale, L. M. (2016). Macroeconomic analysis of the relationship between monetary policy instruments and inflation in Nigeria. *International Journal of Business and Management Review*, 4(6), 31-39.
- Van Wyngard, D., Meyer, D. and De Jongh, J. (2018). An assessment of the effectiveness of monetary policy in South Africa. *AUDCE*, 14(6), 281-295.