IMPACT OF MONETARY POLICY ON ECONOMIC GROWTH IN NIGERIA
(1986 -2019)

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ABSTRACT

The growing importance of monetary policy has made its effectiveness in influencing economic growth a priority to most governments. Therefore the study investigates the impact of monetary policy on economic growth in Nigeria from 1986 to 2019, by using interest rate variables for monetary policy and GDP as a proxy for economic growth. The study applied the autoregressive distributive lag (ARDL) model to analyze the data. The result shows that interest rate and domestic credit have a statistically significant impact on economic growth in Nigeria while the exchange rate on the other hand has a statically non-significant effect on economic growth. It is therefore recommends that the central bank of Nigeria should continue to use appropriate monetary policy instruments to support Nigeria's economic growth taking into account economic and political conditions in the country. '

Keyword: *Importance of Monetary policy, its effectiveness in growths of an economy.*

1.1 INTRODUCTION

A stable exchange rate is a key factor in international trade which can influence the number of foreign reserves as well as the value of imports and exports of a country. This subject has come to the surface and became a topical issue in academic debate in Nigeria because it is the goal of every economy to have a stable rate of exchange with its trading partners. The government of Nigeria lunched Structural Adjustment Program (SAP) with the support from International Monetary Fund (IMF) and World Bank in 1986 (Mordi 2016). The failure to realize the goal of exchange rate stability subjected the Nigerian manufacturing sector to the challenge of a constantly fluctuating exchange rate. One objective of the SAP was the restructuring of the production base of the economy with a positive bias for the production of agricultural exports. The foreign exchange reforms that facilitated a cumulative depreciation of the real exchange rate were expected to increase the domestic prices of agricultural exports and hence boost domestic production.

SAP was adopted in 1986 to among other things get the price right using the exchange rate reforms as its central tool (Mordi, 2016). In pursuit of this, the Second-tier Foreign Exchange Market (SFEM) was introduced in late September 1986 and since then the naira has depreciated sharply against the US dollar and the other major currencies (Obamas, Okafor, Aluko&Eze, 2018). This development shows that a depreciation of the naira has a role to play in Nigeria's recent inflationary trends.

In addition to the above, the frequent fiscal deficit operation in the last two decades in which budget deficit was financed through banks has further exerted

upward pressure on the general price level. This suggests that the current inflation may have been caused by these factors. While the channels through which exchange rate depreciation affect prices are well known, the extent to which this phenomenon engenders price inflation in Nigeria is one of the reasons for the study (Obamas et al, 2018). Empirically many researchers such as Akinmulegun and Falana (2018), Ufoeze, Okuma, Nwakoby and Alajekwu (2018), and Ehigiamusoe and Lean (2019) analysed the effects of exchange rate, as it resulted in the change in the structure and value of Nigeria's exports. The increase in the prices of agricultural export products and the result indicated a marked increase in the volume of agricultural exports over the years. However, very little achievements were made in stabilizing exchange rate. Consequently, the problem of exchange rate volatility in Nigeria persists up till date.

Domestic credit refers to financial resources provided to the private sector by the financial sector. More than that, domestic credit reflects the financial development of a country (Bui, 2019) and contributes to the efficient investment allocation, the increase of investment, and most notably boosts the economy (Botev & Jawadi, 2019). In other words, the economy with a rapidly increased domestic credit develops better than other economies (Bayoumi & Melander, 2008).

Hence, the positive relationship between domestic credit and economic growth has by many scholars around the world (Thierry et al., 2016). Nevertheless, Pagano and Pica (2012) argued that domestic credit is not always positively correlated with economic growth. It can even exert negative impact on economic growth (Levine, 2005; Cournède & Denk, 2015). In fact, the recent global financial crisis is a typical example of how the excessive increase and inefficient use of domestic credit lead to the waste of national sources, thereby negatively affecting economic growth.

Therefore, it is clear that there exist different views on the correlation between domestic credit and economic growth which needs more empirical analyses. Thus, does the nonlinear effect ofdomesticcredit on economic growth really exist? This question has not been satisfactorily answered by prior studies. It is Goldsmith (1969) who initiated the identification of optimal financial structure for the aim of boosting economic growth. Recently, Botev and Jawadi (2019) also investigated the nonlinear effect of domestic credit on economic growth but failed to determine the optimal threshold. Hence, to analyze the nonlinear relationship between domestic credit and economic growth is necessary.

As monetary policy's work has been saddled with the responsibility to make use of monetary policy in order to grow their economies since it has influenced macroeconomic objectives. In Nigeria for example, CBN has been authorized to formulate and implement monetary policy since the start of the Central Bank of Nigeria (CBN) in 1958. In order to do so, CBN helped the emergence in the country of an active monetary market and adopted various monetary regimes. The exchange rate targeting regime for example was applied between 1959-1973 and the monetary targeting regime was used from 1974 until now and usually takes two forms: direct monetary control between 1974 and 1992 and indirect monetary control between 1993 to present. At times monetary policy is tight and at other times it is loose, mostly used to stabilize prices. The economy also experiences times of expansion and contraction. But despite all these, there are a lot of arguments that growth has not been sustainable and encompassing as there is the problem of slow economic growth and unstable prices. In addition to that according to CBN (2019) 1,704, 454.21 because of the failure of banks to mobilize savings, naira was outside the bank system, giving depositors reasonable interest rate.

They all weakened the effect of monetary policy on Nigeria's economic growth together with a large informal sector that undermined the monetary policy. Therefore,

using the key objectives of monetary policy, the extent to which monetary policies have impacted Nigeria's economy's growth process.

The broad objective of this study is to assess the impact of monetary policy on economic growth in Nigeria. The specific objectives is to examine the impact of interest rate on economic growth in Nigeria.

2.1 Concept of Monetary Policy

The deliberate use of monetary instruments (direct and indirect) at the disposal of monetary authorities such as the central bank to ensure macroeconomic stability is known as monetary policy. Monetary policy is the mechanism used to carry out the monetary and price stability mandate (Owivedu, 2016). Monetary policy has long been recognized as an important tool that a country can use to maintain domestic price and exchange rate stability, which is a prerequisite for achieving long-term economic growth and external viability (Adegbite& alibi 2013).Monetary policy entails adjusting the interest rate and affecting the money supply, and it is normally carried out by central bank monetary authorities in order to promote goals of stronger economic growth or inflation management (Hassan, Faisal and Baba 2016).

The monetary authority's deliberate activity to alter the quantity, cost, and availability of money and credit in order to achieve desired macroeconomic objectives at internal and external balances is known as monetary policy (CBN, 2011).

Monetary policy is described as the government's economic strategy for deciding whether to expand or reduce the country's money supply, which is normally implemented through the central bank (business dictionary 2018).Monetary policy is a tool used by central banks to achieve their goals of general economic policy by controlling the supply of money (Johnson).

The working definition of monetary policy for this research shall be the CBN definition 2011. The reason for adopting the definition is that it captures the main objective of the research topic that is, an increase in the money supply can be used to achieve economic growth through monetary policy. And availability of credit to the economy which in turns have a multiplier effect on the economy.

2.1.2 Monetary Policy and Nigerian Economy

With the implementation of exchange rate target (1959-1973) and monetary targeting (1973-date) techniques, Nigerian monetary policy has developed over time to span both the direct and indirect periods. Independent monetary policy, on the other hand, did not begin until 1979. By 1993, the CBN had turned to an indirect monetary policy method. The monetary policy goals of achieving domestic price and exchange rate stability, maintaining a favorable balance of payments position, developing a sound financial system, and promoting rapid and sustainable economic growth were not affected by the switch.

The use of market (indirect) instruments to regulate the growth of key monetary aggregates and the management of the exchange rate constitutes part of Nigeria's current operational framework for monetary policy management. Only the operating variables of the monetary base or its components are targeted in this paradigm, leaving interest rates and credit distribution to the market.

Essentially, the approach entails determining (ex-ante) the ideal monetary stock that is consistent with pre-determined aims for GDP growth, inflation, and foreign reserves, and then using market instruments to alter bank reserve balances and credit-creating capability.

2.1.3 Monetary Policy It's Objectives and Instruments

The objectives of monetary policy may differ depending on the economy's phase of development. Full employment, price stability, as well as price stability are the goals of monetary policy. Maintaining the balance of payments while growing the economy (Jhigan, 2013). Moreover, Sanusi (2002) Nigeria's monetary policy objectives have been expanded to include: The achievement of a domestic pricing, as well as the stability of the exchange rate, are all important goals. Maintaining a stable Balance of Payments position in order to maintain the national currency against foreign currencies is essential, Development of a sound financial system and promotion of an economic growth and development rate that is both quick and sustainable.

Monetary policy instruments are divided into two categories: quantitative and qualitative. Quantitative tools include bank rate changes, open market operations, and adjusting reserve requirements. Commercial banks will be used to regulate the overall level of credit in the economy. Changing margin requirements and consumer credit regulation are examples of qualitative instruments aimed at limiting certain forms of loan.

2.1.4 Interest Rate Channel

The price at which the central bank supplies reserves to the banking sector is known as the interest rate. (Keynes, 1930) interest rate is the proportion of an amount loaned which a lender charges to the borrower. Traditionally, the interest rate channel has been the most commonly utilized channel by the central bank in which it induced a policy that directly affects the rate at which banks borrows from each other. According to Ireland (2005), as investor's arbitrage away differences in risk-adjusted expected returns on debt instruments of various maturities, a policy-induced increase in the short-term interest rate leads to an increase in the longer-term interest rate. The interest rate channel influences the economy in a variety of ways and through a number of interconnections. For example, a fall in the lending rate will increase aggregate demand leading to an increase in borrowing as well as spending but negatively affect saving consequently resulting in higher prices. In other words, when central banks decrease interest rates, the cost of credit falls and the demand for credit rises, resulting in an increase in aggregate demand and, as a result, inflation. On two levels, the interest rate channel is deemed to be trustworthy. First, the central bank should be able to affect both short and long-term interest rates, and second, the components of aggregate demand should be interest-sensitive (Juks, 2003). It is a direct link of impact for monetary policy in bank base economics. The interest channel is to produce quick changes on commercial rate leading to changes in expenditures and savings decisions of consumers and ultimately on overall output (CBN, 2016).

2.2 Theoretical Literature Review

Classical Theory

The classical school arose as a result of the combined efforts and contributions of economists such as Joan Baptist Say, Adam Smith, David Ricardo, Pigou, and others who shared similar beliefs. Classical economists think that by focusing on the price level and how to best reduce inflation, the economy will naturally move towards full employment. The classical model is based on the supply and demand concept, which states that supply produces demand (Celina 2014).Furthermore, classical money is a curtain that is neutral in its impact on the economy. It has no effect on anything other than the price level. When the money supply is increased, the price level rises, but real income, interest rates, and the amount of real economic activity stay unchanged. This demonstrates that money's primary role in the classical system is to serve as a medium of trade. Its purpose is to establish the general price level at which products and

services will be traded. The quantity theory of money is used to explain the relationship between money and price level.

The quantity theory of money underpins the classical economist's understanding of monetary policy. The fisher's equation of exchange, which is provided by the phrase, is commonly used to discuss the quantity theory of moneyMv = Py

Where M = Stock of Money
P = General Price Level
V = the flow of real goods & services (Inam & Ime, 2017)

According to the classical economist, the economy is always at or near its natural level of real GDP. As a result, they believe that Y in the exchange equation is fixed in the short run. They further claim that because the velocity of money circulation tends to remain constant, V might be considered fixed. Given that Y and V are both constants. As a result, whether the CBN pursues an expansionary or contractionary monetary policy, the money supply will expand or fall. As a result, expansionary monetary policy can only result in inflation, while contractionary monetary policy can result in price deflation (Nwoko, Ihemeje & Anumadu 2016).

3.0 METHODOLOGY

This study adopts descriptive research design, as it will involve establishing relationship between dependent and independent variables. Descriptive research method is used in this research, because the researcher wants to find and discover the regression among the identified variables with reference to the impact of monetary policy on economic growth in Nigeria from 1986 to 2019

The data for this study were extracted from the annual reports from bureau of statistics. The scope of this study will cover period between 1986 and 2019, to determine the effects of monetary policy on Nigeria's economic growth. The study will be focusing on annual time series data.

Procedure for Data Analysis and Model Specification

The data was tested for normality using Skewness/Kurtosis tests for Normality and the panel regression was used to analyse the data. The post regression specification tests were also conducted using Variance Inflation Factor test for Multicollinearity and the Hetereoskedasticity test was performed using Breusch-Pagan/Cook-Weisberg test for hetereoskedasticity.

Specification of the Objective One

To achieve objective one, examine the impact of interest rate on economic growth in Nigeria short run and long run ARDL model for this study is defined as follows:

$$GDPG_t = \alpha_0 + \alpha_1 \sum_{i=1}^{n} \Delta EXR_{t-i} + \alpha_2 \sum_{i=1}^{n} \Delta INF_{t-i} + \alpha_3 \sum_{i=1}^{n} \Delta CFM_{t-i} + \beta_1 \sum_{i=1}^{n} INT_{t-i} + \beta_2 \sum_{i=1}^{n} INF_{t-i} + + \beta_3 \sum_{i=1}^{n} CFM_{t-i} \beta_4 \sum_{i=1}^{n} M2_{t-i} \ldots\ldots\ldots\ldots \quad (3.18)$$

Where,

$GDPG_t$= Gross Domestic Product growth
$\sum_{i=1}^{n} INT_{t-i}$ = interest Rate
$\sum_{i=1}^{n} INF_{t-i}$ = Inflation Rate
$\sum_{i=1}^{n} CFM_{t-i}$ = Gross Capital Formation
α_0= constant
α_1-α_4= short-run coefficients
β_1-β_4= long-run coefficients
$\sum_{i=1}^{n} \varepsilon_{t-i}$ =error terms,

The last stage in the ARDL test method to co-integration is in evaluating the coefficients of long-run co-integrating relationship and the corresponding error correction term (ECT) as follows:

$GDP_t = .\aleph_0 + \aleph_1 \sum_{i=1}^{n} INT_{t-i} + \aleph_2 \sum_{i=1}^{n} INF_{t-i} + + \aleph_3 \sum_{i=1}^{n} CMF_{t_{-1}} + \Theta ECM_{t_{-i}}$ .... (3.19)

Where $\aleph_0$ = constant of ECM mode

$\aleph_1 - \aleph_3$= magnitudes of error correction

$L =$ Long term

Θ = Error Correction Mechanism (ECM) which is the speed of adjustment to long-run equilibrium

ECM measures the rapidity of modification from short-run disequilibrium into equilibrium in the long run.

The descriptive statistics of the variables evaluated. In research, descriptive statistics are used to describe data characteristics. They give a simple summary of the samples and indications. They are also the basis for virtually all quantitative data analysis.

The researchers also looked at skewness and kurtosis, which are descriptive statistics. Skewness is a symmetry, or more correctly, a lack of symmetry, measurement. It is symmetric if the distribution or data set looks the same on both sides of the center point. The normal distribution has no skewness. A negative value indicates that the data is skewed to the left, and a positive number shows that the data is biased to the right. Kurtosis, on the other hand, is a measure of how heavy or light tailed the data is in comparison to a normal distribution. The standard normal distribution has no kurtosis. Positive kurtosis denotes a heavy-tailed distribution, while negative kurtosis denotes a light-tailed distribution.

According to the obtained results, all research variables except the balance of payments and trade openness are biased. This is because, except for the balance of payments and trade openness, all skewness values are positive. When the kurtosis value is positive, however, it indicates that all of the data sets or distributions are heavy-tailed.

Table 1 Descriptive Statistics of the Variables under Study

	GDPG	INT	LEXR	INF	LBOP	TOP	CFM	LQR
Mean	4.960469	139.6576	3.488605	44.23241	22.03948	35.82470	29.93814	13.46453
Median	5.307924	99.57526	3.496204	39.10000	22.07854	37.02160	27.58251	12.92431
Maximum	15.32916	536.7681	4.441474	89.59000	24.32137	53.27796	58.94738	52.72271
Minimum	-1.616869	49.73297	2.588516	18.16000	18.62469	9.135846	0.000000	0.000000
Std. Dev.	3.774721	118.7721	0.602640	23.35743	1.626338	11.95503	14.88646	14.61507
Skewness	0.446116	2.277781	0.099927	0.685150	-0.444422	-0.815869	0.317922	0.861568
Kurtosis	3.537170	7.401597	1.689492	2.177996	2.320551	3.202662	2.267751	3.037026

Jarque-Bera	1.310593	48.48703	2.123492	3.085371	1.512465	3.266898	1.136420	3.589436
Probability	0.519288	0.000000	0.345851	0.213806	0.469432	0.195255	0.566539	0.166174
Sum	143.8536	4050.070	101.1696	1282.740	639.1448	1038.916	868.2061	390.4713
Sum Sq. Dev.	398.9584	39499 1.1	10.16891	15275.95	74.05932	4001.837	6204.988	5980.809
Observations	29	29	29	29	29	29	29	29

Unit Root Test

As mentioned in the previous chapter, the condition for adopting autoregressive distribution lag is to ensure that the variables are I (0) and I (1). Unsurprisingly, through the use of enhanced Dickey-Fuller test and Philip-Perron test, GDP, interest rates, exchange rates, domestic credit, inflation rate, balance of payments, trade openness and liquidity ratios are at a certain level. The degree is not stable, but it stagnated at the beginning. And found that the level of total capital formation is fixed. The table 1indicates the results of the obtained for unit root test.

Table 2: Summary of unit root test
(Augmented Dickey-Fuller Test)

VARIABLES	TEST STATISTICS AT LEVEL	5% CRITICAL VALUE AT LEVEL	TEST STATISTICS AT FIRST DIFFERENCE	5% CRITICAL VALUE AT FIRST DIFFERENCE	ORDER OF INTEGRATION
GDPG	-2.758571	-2.941145	-11.63398	-2.941145	I(1)
INT	-1.919896	-2.938987	-4.298499	-2.941145	I(1)
LEXR	-1.146155	-2.938987	-5.467872	-2.941145	I(1)
INF	-1.659569	-2.938987	-5.643901	-2.941145	I(1)
LBOP	-1.311427	-3.212696	-6.138697	-3.040391	I(1)
TOP	-2.713053	-2.938987	-7.937866	-2.941145	I(1)
CFM	-2.975493	-2.938987	-18.45131	-2.941145	I(0)
LQR	0.271284	-2.938987	-6.054106	-2.941145	I(1)

ARDL for Objective One (Short-Run Dynamics)

To estimates the variables in the model, the study decided to choose Akaike Information Criteria (AIC) to achieve the best lag selection. Subsequently, it chose ARDL (2, 4, 4, 4, 4), and the results are shown in Table 1.

By looking at the results obtained, it is clear that interest rates and inflation rates are not important for explaining the changes of GDPin Nigeria. On the other hand, it is found that the total capital formation is large.

The results show that as interest rates rise by 1%, GDP rises by 0.01%. Similarly, when the inflation rate rises by 1%, GDP falls by 0.006%. If Nigeria's total capital formation level increases by 1% under the 5% confidence level, its gross domestic product will fall by 1.54%.

In addition, the adjusted R-squared estimate is 0.70, which means that 70% of GDP changes are explained by interest rates, inflation, and total capital formation rate. Essentially, the remaining 30% is influenced by external factors (not captured in the model). The F statistic, which happens to be 5.9535, backs up the coefficient of determination (0.0002). This means the explanatory variables all have the same meaning when it comes to explaining Nigeria's GDP. The derived Durbin Watson statistic is 2.03, suggesting that the estimated equation's residuals have no serial correlation.

Table 3ARDL Short-Run Estimate for Objective One

Dependent Variable: (GDPG)Selected Model: ARDL(2, 4, 4, 4)				
GDPG(-1)	0.188636	0.126648	1.489455	0.1537
GDPG(-2)	0.220900	0.127122	1.737703	0.0993
INT	0.018209	0.010158	1.792469	0.0899
INT(-1)	-0.008785	0.011718	-0.749696	0.4631
INT(-2)	0.015492	0.011475	1.350105	0.1937
INT(-3)	-0.033743	0.010863	-3.106186	0.0061
INT(-4)	0.042478	0.007017	6.053708	0.0000
INF	-0.000709	0.036052	-0.019667	0.9845
INF(-1)	0.069185	0.047702	1.450348	0.1642
INF(-2)	-0.072457	0.048932	-1.480770	0.1560
INF(-3)	0.039057	0.047552	0.821349	0.4222
INF(-4)	-0.123821	0.037704	-3.284020	0.0041
CFM	-0.546428	0.120985	-4.516511	0.0003
CFM(-1)	0.439638	0.153518	2.863761	0.0103
CFM(-2)	-0.327793	0.154078	-2.127447	0.0475
CFM(-3)	0.149782	0.117438	1.275413	0.2184
CFM(-4)	0.041929	0.036445	1.150470	0.2650
C	8.717956	2.860929	3.047246	0.0069
R-squared	0.849007	Akaike info criterion		4.634199
Adjusted R-squared	0.706403	Schwarz criterion		5.425958
F-statistic	5.953591	Hannan-Quinn criter.		4.910544
Prob(F-statistic)	0.000231	Durbin-Watson stat		2.034007

Source: Author's Computation, 2021Using Eviews10

Co-integration Test

The cointegration test standard of the autoregressive model, unlike the vector error correction model, must be tested. This is done in order to see if the variables have a long-term relationship. The F statistic is compared to Pesaran et al. (2011) and lower

test thresholds to evaluate whether there is cointegration between variables. According to Englama et al. (2013), there is a long-term relationship between linked variables when the estimated F statistic exceeds the upper critical value, and there is no cointegration between the variables when the estimated F statistic is less than the lower critical value. In addition, when the estimated F statistic is between the lower critical value and the upper critical value, an uncertain conclusion can be drawn.

The null hypothesis (that there is no long-term relationship between GDP, interest rates, inflation, and gross capital formation) was rejected, as shown in Table 4.4. This is because even if there is a 1% significance level between variables, there is a long-term relationship. This is evident in Table 4.4, because the F statistic 11.68243 is greater than the significant thresholds of 1%, 2.5%, 5%, and 10%.

Table 4: Estimated Output for ARDL Bound Test for Objective One

Test Statistic	Value	k
F-statistic	11.68243	3
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.37	3.2
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Source: Author's Computation, 2021Using Eviews10

Long-Run Relationship

Unlike short-term dynamics, all variables under study are considered statistically significant. If the interest rate is raised by 0.56 percent per unit, the GDP will rise by 0.56 percent. Furthermore, if the inflation rate rises by one unit, the GDP will fall by 0.15 percent. Finally, there is a long-term negative association between gross domestic product and gross capital formation, as gross capital formation grows by one unit, resulting in a 0.41 percent increase in gross domestic product.

Table 5: ARDL Long-Run Estimate for Objective One

Dependent variable: (GDPG)Selected Model: ARDL(1, 1, 1)				
INT	0.056989	0.025327	2.250174	0.0372
INF	-0.150298	0.069925	-2.149414	0.0454
CFM	-0.411324	0.143293	-2.870515	0.0102
C	14.76459	4.934670	2.992011	0.0078

Source: Author's Computation, 2021Using Eviews10

Error Correction Model

After obtaining evidence of the long-term relationship between the variables, we determined the adjustment speed of the balance. To this end, an error correction mechanism (ECM) is used. The results are shown in Table 5.

The results of the error correction model in Table 4.6 show that the error correction term ECT is negative, -0.59, and has a small probability value of 0.0000 at 5%. This is further consistent with the results of the "boundary" test, which means that

variables such as GDP, interest rates, inflation, and total capital formation have long-term relationships.

The negative coefficient of the ECT term means that if any imbalance occurs, adjustments will be made in the system. Therefore, this year's independent variable (GDP) imbalance has been automatically corrected to 59%.

Table 6: Estimated Error Correction Model (ECM) for Objective One

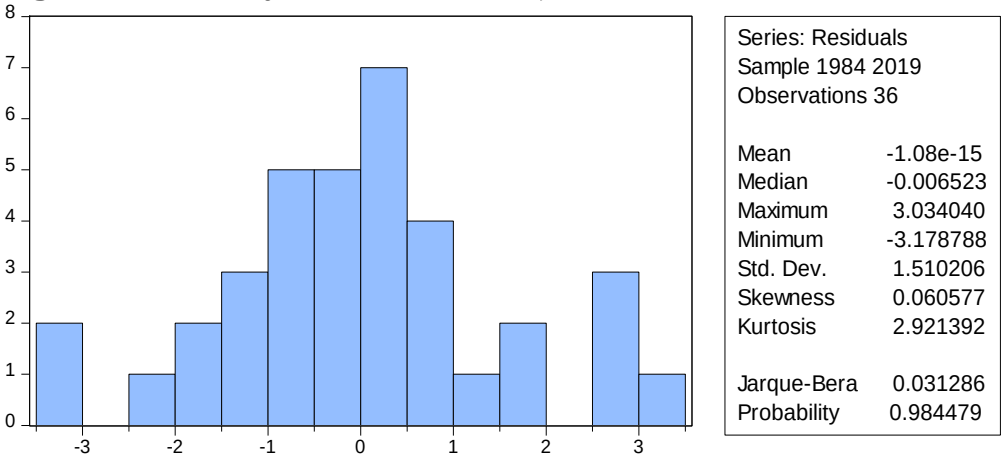
Dependent variable: GDPG				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDPG(-1))	-0.220900	0.088481	-2.496574	0.0225
D(INT)	0.018209	0.007066	2.576975	0.0190
D(INT(-1))	-0.024227	0.006585	-3.679159	0.0017
D(INT(-2))	-0.008735	0.006280	-1.390783	0.1812
D(INT(-3))	-0.042478	0.006066	-7.002218	0.0000
D(INF)	-0.000709	0.029120	-0.024349	0.9808
D(INF(-1))	0.157221	0.031638	4.969315	0.0001
D(INF(-2))	0.084764	0.032341	2.620944	0.0173
D(INF(-3))	0.123821	0.032739	3.782044	0.0014
D(CFM)	-0.546428	0.079819	-6.845827	0.0000
D(CFM(-1))	0.136082	0.087879	1.548521	0.1389
D(CFM(-2))	-0.191711	0.078741	-2.434718	0.0255
D(CFM(-3))	-0.041929	0.028304	-1.481365	0.1558
CointEq(-1)*	-0.590464	0.069882	-8.449416	0.0000

Source: Author's Computation, 2021Using Eviews10

Normality Test

This is the analysis after the test. The order involved in this test is the residual. The purpose of the normality test was whether the residuals are normally distributed. As can be seen from the results in Figure 4.1, the histogram and frequency polygon are bell-shaped. Therefore, the residuals are normally distributed.

Figure 1 Normality Test Chart for Objective One



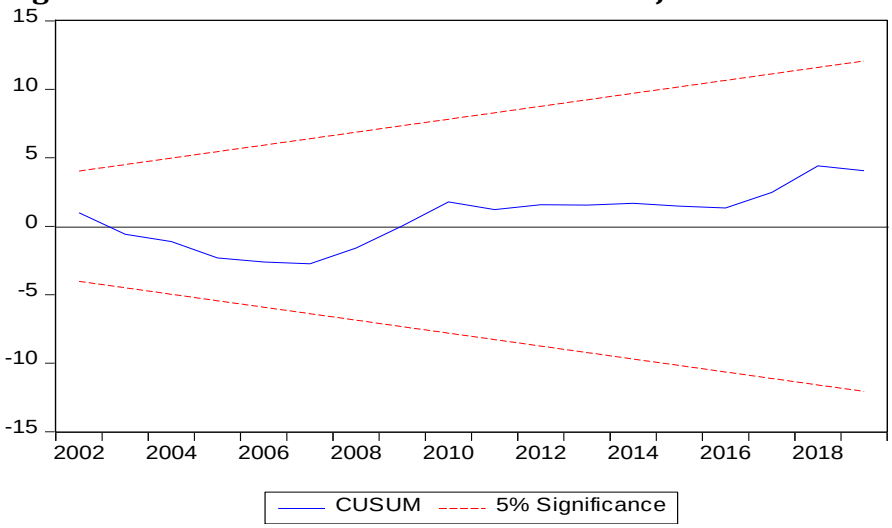
Test for Autocorrelation and Heteroscedasticity

The Breusch-Godfrey series correlation LM test with an F-statistical probability value of 0.2164 and the Breusch-Pagan-Godfrey heteroscedasticity test with an F-statistical probability value of 0.4600, both of which are higher than 5%, indicate that the model is free of autocorrelation and heteroscedasticity.

Table 7: Test for Autocorrelation and Heteroscedasticity for Objective One

MODEL	F-STATISTIC	PROBABILITY
Serial Correlation LM Test	1.686968	0.2164
Heteroscedasticity Test	1.047531	0.4600

Figure 2 CUSUM Test Chart for Objective One



ARDL for Objective Two (Short-Run Dynamics)

The short-term ARDL estimation in the table 4.8 above indicates that the model is a fitted model with R-square estimated value of 0.90 and an adjusted R-square of 0.59. This clearly shows that about 59% of the dependent variables have explained by the explanatory variables, while the remaining 41% are explained by variables outside the model. In addition, it is also found that all variables have a common meaning for the explanatory dependent variables, as revealed by the F statistic 2.93 and its small probability value of 0.01.

The exchange rate and inflation rate have a negative impact on economic growth, but the balance of payments and liquidity ratio have a positive impact, according to the model in Table 4.8. To be accurate, a 1.00 percent change in the exchange rate will result in a change in GDP. Furthermore, the shift in the balance of payments unit will boost Nigeria's GDP by 2.34 percent, or 5%. During the reporting period, a 1% change in the inflation rate will result in a 0.30 percent loss in GDP, whereas a 1% change in the liquidity ratio will result in a 0.22 percent increase in GDP.

Conclusion

The effects of monetary policy on Nigeria's economic growth was investigated in this study. Annual time series data from 1980 to 2019 are used to estimate the interest rate, exchange rate, domestic credit, inflation rate, total capital creation, trade openness, balance of payments, liquidity ratio, and total domestic credit growth. Model ARDL. In this study, interest rates, exchange rates and domestic credit to the private sector can replace monetary policy, and GDP growth can replace Nigeria’s economic growth.

The autoregressive distribution lag model's long-term estimation demonstrates that interest rates and domestic credit have statistically significant effects on Nigeria's economic growth, whereas the exchange rate has no statistically significant effect.

As a result, it may be argued that monetary policy has an impact on economic growth, and that if managed properly, monetary policy can be utilized to boost a country's economic growth.

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