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EFFECT OF MONETARY POLICY ON THE RATE OF UNEMPLOYMENT IN NIGERIAN ECONOMY(1986-2018)

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ABSTRACT:

This study examines the effect of monetary policy instruments on unemployment in Nigeria (1986-2018) using secondary data from Statistical bulletin of Central Bank of Nigeria(2020)Specific objectives of the study is to find out the effect of monetary policy rate, broad money supply, exchange rate, liquidity ratio and cash reserve ratio on unemployment. The study adopted an Autoregressive Distributed Lag technique and also conducted the unit root and co-integration test. The study found that cash reserve ratio and monetary policy rate had positive and insignificant effect on the employment rate in Nigeria, broad money supply had positive and significant effect on the employment rate in Nigeria, exchange rate and liquidity ratio had negative and significant effect on the employment rate in Nigeria. The study concludes that monetary policy has significant effect on the rate of unemployment. Based on the findings made in the course of this study, the study recommends that the Monetary policies should be used to create a favourable investment climate by facilitating the emerging of market based interest rate and exchange rate administration that will attract both domestic and foreign investments and create jobs, Government should build an effective and sustained low interest rate intervention fund to support the real sector, especially small and medium enterprises. Hence, it is recommended that policy makers in Nigeria should focus invariably on the adjustment of interest rate when considering unemployment in its monetary policy decisions.

Keywords: *Cash Reserve Ratio; Exchange Rate; Liquidity Ratio; Monetary Policy, Monetary Policy Rate; Money Supply; Unemployment.*

1. INTRODUCTION

Monetary policy is the strength of every economy in the world. The objectives of monetary policy are overtly stated in the laws establishing the central bank. Monetary policy being a key economic stabilization instrument involves measures taken by the Central bank to regulate and control the volume, cost, availability of money in circulation (credit) in order to achieve desired macroeconomic objectives of internal and external balances (CBN, 2011).Monetary policy is typically concerned with the way in which monetary authorities use the instruments to influence the decision of economic agents with the intention of achieving overall macroeconomic stability (Ononugbo, 2012). The specific objective and the focus of monetary policy may change from time to time, depending on the level of economic development and economic conditions of the country. The choice of instrument to use to achieve specific objective would depend on these and other circumstances. Various techniques of monetary policy, thus, include bank rate, open market operations, variable cash reserve requirements, selective credit controls. Over the years, the objectives of monetary policy

have remained the attainment of internal and external balance of payments. However, emphasis on techniques/instruments to achieve those objectives has changed over the years (CBN,2014).

Monetary policy generally referred to as being expansionary or contractionary, where an expansionary policy increases the total supply of money in the economy rapidly, and contractionary policy decreases the total money supply, or increases it slowly. When a central bank embarks on an expansionary monetary policy, it does so to stimulate domestic economy and reduce unemployment, while contractionary policy involves raising interest rates to combat inflation (Engler, 2011). Nigeria's monetary policy could be divided into two broad policy administration: the direct monetary policy instruments also known as qualitative instruments and quantitative instruments which are regarded as general tools. The direct method of control which was used from 1960-1993 and the indirect control introduced from 1993-2018. The direct control method was characterized by quantitative ceilings on credits, administered interest and exchange rates, aggregate/sectoral allocation of credits and stabilization securities (Obadan, 2006). Under this administration the economy was divided into preferred sector and the less preferred sector and banks were required to allocate a given proportion of their credits to different sectors. The basis was to moderate aggregate demand by controlling the volume and cost of credit that goes into the economy (Oyakhilomen & Rekwot, 2014). Key instruments used during this period include: administrative fixing of the minimum rediscount rate (MRR), cash reserve requirements, liquidity ratio, stabilization securities and transfer of federal government's (including ministries and parastatals) deposits to and from the central bank. Monetary objective during this period was to moderate the rate of inflation, reduction of pressures on the external sector so as to achieve a sustainable balance of payment position and stabilizing the naira exchange rates. Monetary management using direct controls faced a number of constraints which led to repressed financial market and misallocation of resources in the banking sector (Sanusi, 2009).

In order to reduce the distortion and incompetence in the financial system, market oriented approach was introduced. Indirect method of control employs market-based instruments and requires some levels of market infrastructural development to be effective. It relies on the power of monetary authorities to influence the availability and rate of return on financial assets. Two broad administrations could be identified during the indirect method of monetary management; they are indirect control under the pre-consolidation era (1993-2005) and indirect control during the post-consolidation era (2006-date). Instruments used under pre-consolidation era include open market operation (OMO) through use of the Nigerian Treasury Bills (NTB) and Certificates, CBN Bills and Special NTBs, reserve requirements, liquidity ratios and movement of government deposits to and fro CBN (Okafor, 2009). The post-consolidation era saw the introduction of the Monetary Policy Rate (MPR) to replace the MRR, and a standing lending and deposit facility. Other instruments used under this era includes, Open Market Operations (OMO), Cash reserve requirements and Foreign exchange swap (Borio, 2014).The strategy was to control the aggregate demand through the control of interest rates and money supply.

The Nigerian National Bureau of Statistics (NBS, 2019) defines unemployment as the proportion of those in the labour force (not in the entire economic active population, nor the entire Nigerian population) who were actively looking for work but could not find work for at least 24 hours during the reference period to the total currently active population. Thus, the definition of unemployment here covers persons (aged 15–64) who during the reference period were currently available for work, actively seeking for work but were without work (NBS, 2015; Olarewaju, 2015; Kale & Doguwa, 2015). According to Doğrul and Soytas (2010), unemployment is an important macroeconomic problem due to its social and economic consequences and therefore it is essential for policy makers to identify the factors that are affecting it the most. When a central bank embarks on an expansionary monetary policy, it does so to stimulate the domestic economy and reduce unemployment: The main motivation for such a policy position is a societal preference for low levels of unemployment which entails both considerable psychological and social costs. One of the objectives of a modern government is to moderate unemployment and make the environment favorable for investors to put resources in other to create jobs and ensure price stability in the economy through compelling and appropriate accomplishment of monetary policies.

Unemployment on the other hand is one of the major fundamental development challenges confronting Nigeria right now. One cannot generally presume that the governments at one level or the other have not done anything to lessen unemployment in Nigeria. For example, the formation of National Directorate of Employment (NDE) and its propensity for acquisition programs like National Poverty eradication programme(NAPEP), Poverty alleviation programme(PAP), Subsidy, Reinvestment and empowerment program(SUREP) and Youth enterprise with innovation in Nigeria (YOUWIN) are a portion of the different adjudication rich with job creation opportunities (Aganga, 2010 & Ogunmade, 2013). Nevertheless studies by Onyemu (2012); Fasanya *et al*. (2013) observed that despite efforts made towards achieving the desired macroeconomics objectives through monetary policy that the results have not been sustainable enough as there are evidences of relatively high rate of unemployment, increased poverty rate, low standard of living, unacceptable rate of inflation etc. especially in less developed economies. Despite all monetary policy measures put in to reduce the problem of unemployment, the problem has been on the increase. The present study is aimed at further evaluating how monetary policy instruments effects unemployment in Nigeria. The paper is organized as follows. Section 1 is the introduction, while section 2 contains theoretical and empirical literature. Section 3 consists of methodology and model specification, while section 4 contains the analysis and discussion of results and Section 5 is the conclusion and recommendations.

Objectives of the Study

The broad objective of the study is to examine the effect of monetary policy on the rate of unemployment in Nigeria and the specific objectives are

i. To examine the effect of cash reserve ratio on the rate of unemployment in Nigeria
ii. To examine the effect of monetary policy rate on the rate of unemployment in Nigeria
iii. To evaluate the effect of broad money supply on the rate of unemployment in Nigeria
iv. To assess the effect of exchange rate on the rate of unemployment in Nigeria
v. To determine the effect of liquidity ratio on the rate of unemployment in Nigeria

Statement of Hypotheses

Ho_1 Cash reserve ratio has no significant effect on the rate of unemployment in Nigeria
Ho_2 Monetary policy rate has no significant effect on the rate of unemployment in Nigeria
Ho_3 Broad money supply has no significant effect on the rate of unemployment in Nigeria
Ho_4 Exchange rate has no significant effect on the rate of unemployment in Nigeria
Ho_5Liquidity ratio has no significant effect on the rate of unemployment in Nigeria

2. LITERATURE REVIEW

2.1 Theoretical Review

The study is based on Keynesian theory. The Keynesian model assumes a close economy and a perfect competitive market with fairly price- interest aggregate supply function. While there are several studies on this debates between Keynesian and Monetarist in the developed countries, only uneven evidence have been provided on this issues in the case of Nigeria (Adefeso & Mobolaji, 2010). The use of monetary policy will be further pursued with the view to understanding the effectiveness of monetary policy in enhancing economic growth in Nigeria. To achieve full employment, Keynes advocated increase in effective demand to bring about reduction in real wages. Thus the problem of full employment is one of maintaining adequate effective demand. Keynes gave an alternative definition of full employment at another place in his General Theorythus: ―it is a situation in which aggregate employment is inelastic in response to an increase in the effective demand for its output.‖ It means that the test of full employment is when any further increase in effective demand is not accompanied by any increase in output. Since the supply of output becomes inelastic at the full employment level, any further increase in effective demand will lead to inflation in the economy.

2.2 Empirical Review

Fasanya, Onakoya and Agboluaje (2013) examined the impact of monetary policy on economic growth in Nigeria. The study used time-series data covering the range of 1975 to 2010.The effects of stochastic shocks

of each of the endogenous variables are explored using Error Correction Model (ECM). The study showed that Long run relationship exists among the variables. Also, the core finding of this study showed that inflation rate, exchange rate and external reserve are significant monetary policy instruments that drive growth in Nigeria.Anowor and Okorie (2016) empirically reassessed the impact of monetary policy on economic growth of Nigeria adopting the Error Correction Model approach. It utilized time series secondary data spanning between 1982 and 2013. The result showed that a unit increase in Cash Reserve Ratio (CRR) led to approximately seven units increase in economic growth in Nigeria. Abdulazeez (2016) examined the impact of monetary policy on economic growth in Nigeria. The study used time-series data covering the range of 1990 to 2010. Multiple regressions were employed to analyze data on variables such as money supply, interest rate, financial deepening and gross domestic product. They were all found to have marginal impact on the economic growth of Nigeria. The study shows further, the aims and objectives of monetary policy, which includes price stability, maintenance of balance of payment equilibrium, full employment and economic growth. In summary, the study found marginal impact on growth due to change in monetary policy application.

Okafor, Oshoke and Akwaden (2015) examined the impact of monetary policy innovations on growth rate of output in Nigeria. This study utilized times series data within the period of 1985 to 2012. The study employed Vector Autoregressive (VAR) estimation technique in the analysis of data. The result showed that money supply exerts significant influence on growth of output in Nigeria while exchange rate and interest rate were insignificant. Udude (2014) examined the impact of monetary policy on the growth of Nigeria economy between the period of 1981 and 2012. Advanced econometric techniques like Augmented Dickey Fuller Unit Root Test, Johansen Cointegration Test and Vector Error Correction Mechanism (VECM) were employed The result of the vector error correction mechanism (VECM) test indicates that it is only exchange rate that exerted significant impact on economic growth in Nigeria while other variables did not. The study concluded that monetary policy did not impact significantly on economic growth of Nigeria within the period under review.

Adigwe, Echekoba and Onyeagba (2015) in their paper examined the impact of monetary policy on the Nigerian economy, In doing this, the Ordinary Least Square Method (OLS) was used to analyse the data between 1980 and 2010. The result of the analysis showed that monetary policy represented by money supply exerts a positive impact on the economic growth but negative impact on the rate of inflation. Essien, Garba , Arigo, Kufre , Suleiman , Ojegwo and Ogbuehi(2016) examined the link between unemployment and monetary policy in Nigeria using a vector autoregressive (VAR) framework for the period 1983 – 2014. The paper investigated the effect of structural change by identifying three structural breakpoints and incorporating them into the VAR model as dummy variables. The results showed that a positive shock to policy rate raises unemployment over a 10 quarter period. In addition, all the variables used as proxy in the model jointly Granger cause unemployment, implying the existence of a dynamic relationship between monetary policy and unemployment in Nigeria. Tonprebofa (2019) evaluated the dynamics of monetary policy and inflation in Nigeria. Monthly data from 2009-2017 were used to estimate the model derived. The Augmented Dickey-Fuller (ADF) unit root test, Johansen Cointegration test and Error Correction model (ECM) were adopted. The findings concluded that money supply, exchange rate, monetary policy rate, treasury bills rate, reserve requirement and liquidity ratio have significant and effective impact on the inflation rate.

Idris (2019) examined the relationship between monetary policy and economic growth in Nigeria using time series data covering the period of 1980 to 2017. The study employed the Cointegration test and the Ordinary Least Square (OLS) technique with the view to estimating the model coefficients and showcase the policy nexus between the variables. Result indicates the existence of long-run relationship between monetary policy indicators and economic growth. Further empirical findings showed that money supply has positive effect, while both exchange rate and interest rate have negative effect on the real GDP. Nwosa (2016) examined the effect of macroeconomic policies on unemployment and poverty rates in Nigeria from 1980 to 2013 with implication to achieving inclusive growth. The study adopted the Ordinary Least Square (OLS) technique. The study observed that among macroeconomic policy variables only exchange rate significantly influenced

unemployment rate while only fiscal policy significantly influenced and poverty rate. This implies that present macroeconomic policies in Nigeria do not guarantee the attainment of inclusive growth in Nigeria. Sa'idu and Muhammad (2015) examined how unemployment and inflation substantially affect economic growth. To achieve this, three models were thoroughly subjected to quantitative analysis, namely; Ordinary Least Square (OLS) method, Augmented Dickey-Fuller (ADF) technique and Granger causality test. The result of the regression revealed that the coefficient of inflation is positive and statistically significant while unemployment is positive but has no significant effect on economic growth. This proves that inflation substantially affect economic growth, although unemployment has little substantial effect on it. The result of causality test suggested that unemployment does not granger causes economic growth and inflation, but economic growth and inflation Granger cause unemployment, also there exist Granger causality between economic growth and inflation. Bassey (2017) examined the role of money supply in determining unemployment rate in Nigeria. A nonlinear autoregressive distributed lag (NARDL) model was employed to examine the pass-through effect of the growth in money supply into unemployment rate using time series data over the period 1985 – 2015. The result observed that money supply plays an important role and reveal that there is a significant pass-through effect of the money supply growth to unemployment rate in the long run.

Ufoeze, Odimgbe, Ezeabalisi and Alajekwu, (2018) investigated the effect of monetary policy on economic growth in Nigeria. The natural log of the GDP was used as the dependent variables against the explanatory monetary policy variables: monetary policy rate, money supply, exchange rate, lending rate and investment. The time series data is the market-controlled period covering 1986 to 2016. The study adopted an Ordinary Least Squared technique and also conducted the unit root and co-integration tests. The study showed that long run relationship exists among the variables. In addition, the core finding of this study showed that monetary policy rate, interest rate, and investment have insignificant positive effect on economic growth in Nigeria. Money supply however has significant positive effect on growth in Nigeria. Exchange rate has significant negative effect on GDP in Nigeria. Money supply and investment granger cause economic growth, while economic growth causes interest rate in Nigeria. On the overall, monetary policy explains 98% of the changes in economic growth in Nigeria.

Egbulonu and Amadi (2016) examined the relationship between fiscal policy and unemployment rate in Nigeria for the period 1970 to 2013. Data for the study were sourced from the National Bureau of Statistics (NBS) and the Central Bank of Nigeria (CBN) Statistical Bulletin (various editions), and consists of Government Expenditure, Government Debt Stock (as proxy for Government borrowing), Government Tax Revenue and Unemployment rate. They found a negative relationship between fiscal policy tools (government expenditure and government debt stock) and unemployment rate in Nigeria while government tax revenue exhibited a positive relationship with unemployment rate. This means that increase in tax rate reduces employment in Nigeria. The results also reveal that, there exist a long-run equilibrium relationship between unemployment and fiscal policy in Nigeria. Baghebo and Ebibai (2014) examined the impact of monetary policy on selected macroeconomics variables such as gross domestic product, inflation, and balance of payment in Nigeria from (1980-2011).Data were extracted from the Central Bank Statistical Bulletin. The study is designed in such a way that it is an econometric investigation of the impact of monetary policy on economic growth in Nigeria using such econometric tools like the ordinary least square (OLS) regression analysis. The study showed that the provision of investment friendly environment in the Nigerian economy will increase the growth rate of GDP.

Ayinde and Adekunle (2017) examined the efficiency of monetary policy in Nigeria for the period 1980-2015 based on annual data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin (various issues) and World Bank Data Base. The result obtained through DEA showed that monetary policy in Nigeria requires some allowable adjustments before efficiency can be achieved and thus, impact on inclusive growth. The result of SVAR framework indicate that the shock from money supply and financial openness substantially impact on inclusive growth. Sulaiman and Migiro (2014) in their study evaluated the nexus (link) between the Nigerian economic growth and monetary policy from 1981 to 2012. It measures economic growth using gross domestic product and the indices of monetary policy that include: cash reserve ratio,

monetary policy rate, exchange rate, money supply, and interest rate. The co-integration test result showed that the variables are cointegrated with one other and the test for causality indicates that monetary policy has a noticeable influence on the growth of the economy, while economic growth does not influence monetary policy equally significantly. This suggested that the monetary policy transmission mechanisms contribute positively to the productivity of the Nigerian economy – thus enhancing economic growth. Ayodeji and Oluwole (2018) examined the impact of monetary policy on economic growth in Nigeria by developing a model that is able to investigate how monetary policy of the government has affected economic growth through the use of multi-variable regression analysis. They proxied the variables of monetary policy instruments to include: Money Supply (MS), Exchange Rate (ER), Interest Rate (IR), and Liquidity Ratio (LR). Economic growth was represented by Gross Domestic Product (income) at constant prices. Error Correction Model was introduced in the estimation in order to have a prudent model. From the result, two variables (money supply and exchange rate) had a positive but fairly insignificant impact on economic growth. Measures of interest rate and liquidity ratio on the other hand, had a negative but highly significant impact on economic growth. In addition, Engle-Granger co-integration test was done and showed the existence of a long run relationship between monetary policy and economic growth in Nigeria. The results showed the existence of a uni-directional causality between money supply and economic growth, economic growth granger causing liquidity ratio and exchange rates while a bi-directional causality exists between interest and economic growth.

Srithilat and Sun (2017) examined the impact of monetary policy on the economic development by using annual time series data from 1989-2016. Johansen Cointegration and Error Correction Model was employed to analyze the association between variables. The findings showed that money supply, interest rate and inflation rate negatively effect on the real GDP per capita in the long run and only the real exchange rate has a positive sign. The error correction model result indicated the existence of short run causality between money supply, real exchange rate and real GDP per capita.

3. MATERIAL AND METHOD

The study adopts ex-post facto research design . The data are sourced from the CBN Statistical bulletin, 2019 edition and National Bureau of Statistics. The time series covers the economic era when monetary policies are seen to be the main elucidation of economies across the world. Thus, the data covers 1986 to 2018. The Keynesian IS-LM function serves as a platform on which the empirical model is formulated as follows. Following McCallum (1991), the following equation is then derived. The present study followed this theoretical function in line with Fasanya, Onakoya and Agboluaje (2013) that employed real Gross Domestic Product as proxy to economic growth ; money supply; interest rate; inflation rate; exchange rate; external reserve as proxies to monetary policy.

$$GDP = f(MPR, MS, EXCH, INT, INV)$$

Where:

GDP	=	*Gross Domestic Product at current market prices*
MPR	=	*Monetary policy rate*
MS	=	*Money supply proxied by the broad money supply (M2)*
EXCH	=	*Real exchange rate*
INT	=	*Interest rate proxied by bank lending rate.*
INV	=	*Investment to the productive sector proxied by Credit to the privatesector.*

The equation of the model is thus:

$$LnGDP = \beta 0\ \beta 1MPR + \beta 2LnMS + \beta 3EXCH + \beta 4INT + \beta 5LnINV + \mu$$

***Ln** = Natural Logarithm of the variables used to smoothen possible scholastic effect from variables at level. **β0** is the constant while **β1 – β5** are the coefficients of the relationships between the independent variables and the dependent variable. **M** is the stochastic error term for the time period covered by the study.*

β1<O, β2>0, β3<0, β4<0, β5>0.

The present study modified the models to assimilate the specific objectives, the following models stated in functional form will be estimated:

$$EMP = f(CRR, MPR, M_2, Exr, LR) \quad \text{3.1}$$

The mathematical form of the model and to normalise the models to avoid the possible effect of any outlier, the models were transformed in a log-linear econometric format as follows:

$$EMP = a_0 + a_1 CRR + a_2 MPR + a_3 M_2 + a_4 Exr + a_5 LR \quad \text{3.2}$$
$$EMP = a_0 + a_1 logCRR + a_2 logMPR + a_3 logM_2 + a_4 logExr + a_5 logLR + e_{it} \quad \text{3.3}$$

Where:

EMP	=	*Employment Rate*
CRR	=	*Cash Reserve Ratio*
MPR	=	*Monetary Policy Rate*
M2	=	*Broad Money Supply*
Exr	=	*Exchange Rate*
LR	=	*Liquidity Ratio*
a_0	=	*Intercept of the model*
$a_1 – a_6$	=	*Parameters of the regression coefficients*
e_{it}	=	*Stochastic error term*

4. RESULT AND DISCUSSIONS

4.1 Descriptive Statistics

Table 1: Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std.Dev	Obs
EMP	87.54545	87.30000	98.10000	72.60000	8.222571	33
CRR	8.509091	7.800000	22.5000	1.000000	6.566076	33
M2	5931.465	1505.960	25079.72	23.81000	7805.683	33
MPR	13.77273	13.50000	26.00000	6.000000	3.895291	33
EXR	101.9850	118.5669	306.0802	2.020600	86.01953	33
LR	45.86061	45.00000	64.10000	29.10000	9.087764	33

***Source:** Eview 9*

Table 1 shows the summary of descriptive statistics used in the analysis. The mean value was shown to be 87.54545 for EMP, 8.509091 for CRR, 5931.465 for M2, 13.7727 for MPR, 101.9850 for EXR and 45.86061 for LR. The median value was shown to be 87.30000 for EMP, 7.800000 for CRR, 1505.960 for M2, 13.50000 for MPR and 118.5669 for EXR and 45.00000 for LR.

4.2 ARDL Co-integration Relationship

Unit root analysis is a test conducted to ascertain if the variables under consideration are stationary. We take the following decision rule: if the absolute value of the Augment Dickey Fuller (ADF) test is greater than the critical value either at 1%, 5% or 10% level of significance at the order of zero, one, or two, it shows that variables under consideration are stationary, otherwise they are not. The results of the unit root test show that

none of the critical values of the variables are greater than the ADF statistical values at first difference except M2.

Table 2: Result of ADF Unit Root Test at 1st Diff

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
EMP	-6.629224 (0.0000)**	-3.661661	-2.960411	Stationary
CRR	-5.435469 (0.0001)**	-3.661661	-2.960411	Stationary
M2	-2.047627 (0.2661)**	-3.661661	-2.960411	not stationary
MPR	-7.870391 (0.0000)**	-3.661661	-2.960411	Stationary
EXR	-3.986222 (0.0045) **	-3.661661	-2.960411	Stationary
LR	-6.121154 (0.0000) **	-3.661661	-2.960411	Stationary

***Source**: Eview 9*

4.3 Co-integration test For Long-run Effect

Pesaran and Shin (2001) showed that cointegrating systems can be estimated as ARDL models; it has the advantage to estimate cointegrating relationship on variables that are either I(0) or I(1). The bound test follows the critical criterion at the lower bound and upper bound value for decision at the three levels of significance in 1%, 5% and 10%.

Table 3: ARDL Bounds Tests for Cointegration

Test Statistic	Value	K
F-statistic	6.285296	5
Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

***Source**: E-Views 9*

Given a computed F statistics Value of 6.285296 which is greater than the lower and upper critical bound valuesat 1%, 2.5%, 5% and 10% respectively, thus indicating the existence of a steady-state long-run relationship among the variables. This suggest that the various selected variables have a long run relationship with employment rate in Nigeria.

4.4 Diagnostic Test

4.4.1 Test for Heteroskedasticity

The assumption of the classical linear regression that the variance of the errors is constant is known as *Homoskedastycity*. If the variance of the errors is not constant, this would be known as *Heteroskedasticity*. The Null hypothesis states that there is no Heteroscedasticity if the p-value is greater than the level of significance (Brooks, 2014).

H_0= *There is no heteroskedasticity*
H_1= *There is heteroskedasticity*

Table 4: Heteroskedasticity Test

F-statistic	1.197065	Prob. F(19,9)	0.4066
Obs*R-squared	20.77803	Prob. Chi-Square(19)	0.3492
Scaled explained SS	3.447052	Prob. Chi-Square(19)	1.0000

***Source**: E-view9*

From the result in Table 4 we accept the Null hypothesis that there is no heteroskedasticity in the models since p-value is greater than the chosen level of significance of 5%. This shows that the models have global utility and is normally distributed. And based on this we conclude that this is the best model to explain the relationship between these variables included in the models.

4.4.2 Normality Test

The normality test was done using the Jarque-Bera Normality test, which requires that for a series to be normally distributed; the histogram should be bell-shaped and the Jarque-Bera statistics would not be significant. This implies that the p-value given at the bottom of the normality test table should be greater than the chosen level of significance to accept the Null hypothesis, that the series is normally distributed (Brooks, 2014).

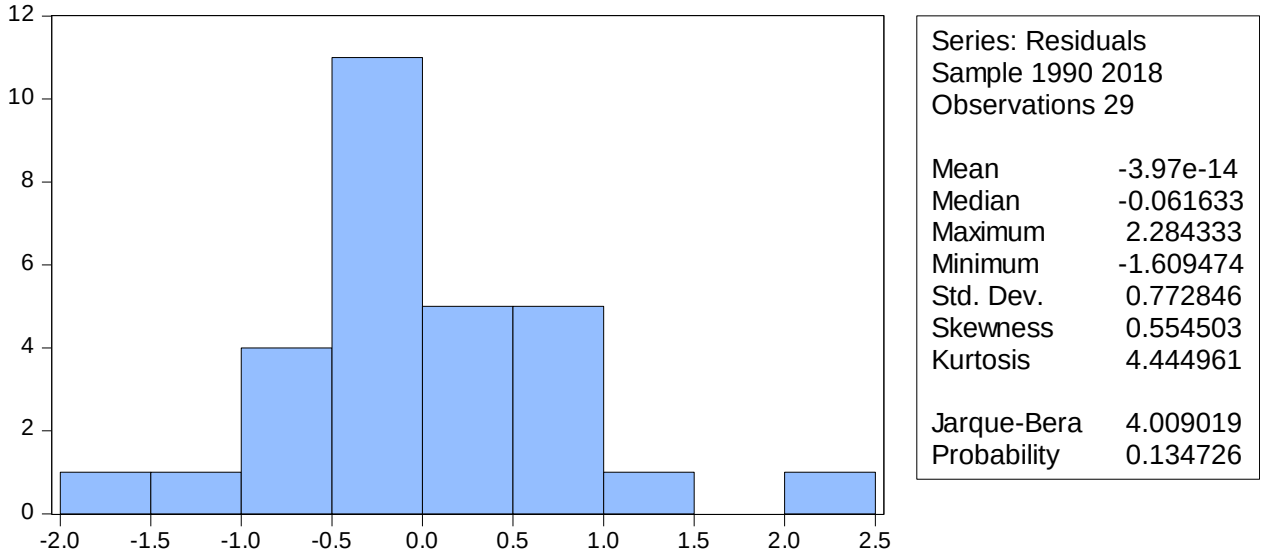


***Fig. 1:** Normality Text*
***Source**: E-views 9.0*

The result of the normality test shows that the probability value of is 0.134726 is greater than 0.05.Based on this however we accept H_0 and reject H_1. We then conclude that the residuals are normally distributed and random.

4.4.3 Ramsey Reset Test

Table 5: Ramsey Reset Test

	Value	Df	Probability
t-statistic	1.818794	8	0.1064
F-statistic	3.308013	(1, 8)	0.1064

***Source**: Author's computations () using E-view 9*

The result of the Ramsey RESET test shows that the p-value of about 10.64% (0.1064) are greater than the critical value of 0.05..This shows that there is no apparent non- linearity in the regression equations and it would be concluded that the linear models are appropriate.

4.5 Autoregressive Distributed Lag

In estimating the effect of monetary policy instruments on employment rate, the Autoregressive Distributed Lag was applied and the result portrayed in Table 6. The outputs were interpreted using the coefficients of the individual variables, Adjusted R-square, f-statistic and Durbin Watson. The decision rule will be based on significance level of 0.05 .

RESTATEMENT OF HYPOTHESES

Ho₁ *Cash reserve ratio has no significant effect on the rate of unemployment in Nigeria*
Ho₂ *Monetary policy rate has no significant effect on the rate of unemployment in Nigeria*
Ho₃ *Broad money supply has no significant effect on the rate of unemployment in Nigeria*
Ho₄ *Exchange rate has no significant effect on the rate of unemployment in Nigeria*
Ho₅ *Liquidity ratio has no significant effect on the rate of unemployment in Nigeria*

Table 6: OLS Regression: Employment Rate and Monetary Policy Instruments

Dependent Variable: EMP
Method: ARDL
Dynamic regressors (3 lags, automatic): CRR MPR M2 EXR LR
Fixed regressors: C
Number of models evalulated: 4096
Selected Model: ARDL(4, 3, 0, 3, 2, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EMP(-1)	0.788747	0.214756	3.672764	0.0051
EMP(-2)	-0.251846	0.130396	-1.931386	0.0855
EMP(-3)	-0.391582	0.149835	-2.613413	0.0281
EMP(-4)	0.148528	0.116084	1.279495	0.2327
CRR	0.041610	0.249801	0.166573	0.8714
CRR(-1)	-0.008895	0.195593	-0.045477	0.9647
CRR(-2)	0.997913	0.175001	5.702317	0.0003
CRR(-3)	-0.433506	0.338953	-1.278954	0.2329
MPR	0.008601	0.134714	0.063847	0.9505
M2	0.002981	0.000734	4.059803	0.0028
M2(-1)	-0.001088	0.001154	-0.943023	0.3703
M2(-2)	-0.006394	0.001192	-5.362436	0.0005
M2(-3)	0.003811	0.001373	2.775628	0.0216
EXR	-0.166103	0.024761	-6.708098	0.0001
EXR(-1)	0.280856	0.050954	5.511920	0.0004
EXR(-2)	-0.167918	0.035102	-4.783742	0.0010
LR	-0.153977	0.048493	-3.175215	0.0113
LR(-1)	-0.140019	0.047352	-2.956957	0.0160
LR(-2)	-0.103711	0.065868	-1.574530	0.1498
C	81.99589	19.02743	4.309352	0.0020

R-squared	0.991372	Mean dependent var	86.58276
Adjusted R-squared	0.973157	S.D. dependent var	8.320288
S.E. of regression	1.363173	Akaike info criterion	3.666746
Sum squared resid	16.72417	Schwarz criterion	4.609709
Log likelihood	-33.16782	Hannan-Quinn criter.	3.962070
F-statistic	54.42718	Durbin-Watson stat	1.995470
Prob(F-statistic)	0.000000		

Source: *E-view 9*

4.6 Text of Probability

The constant parameters for the study are positively related with employment rate. It has a positive coefficient of 81.99589 which implies that if all explanatory variables are held constant in the short-run, employment rate will increase by 81.99589 units. The probability value of 0.0020 which is less than 5% and the t-statistics value of 4.309352 which is greater than 2 shows that the constant is significant therefore if all the variables are held constant (C) has positive and significant effect on employment rate. The coefficient of Cash reserve ratio is 0.041610 and this signifies that in the short run, Cash reserve ratio is positively related to employment rate. A unit increase in CRR means that EMP will increase by 0.041610 units which do not conform to the stated a priori expectation. The probability value of 0.8714 which is greater than 5% and t-statistics value of 0.166573 shows that CRR has positive and insignificant effect on EMP.

The coefficient of the Monetary policy rate (MPR) showed a figure of 0.008601 and it therefore implies that a unit increase in monetary policy rate will result into 0.008601 units increase in employment rate which do not conforms to the stated a priori expectation. The t-statistics value of 0.063847 and the probability value of 0.9505 revealed that MPR has insignificant effect on EMP which means that MPR has positive and insignificant effect on EMP.The coefficient of the Money supply (M2) showed a figure of 0.002981 which means that a unit increase in money supply will result into 0.002981 units increase in EMP which conforms to the stated a priori expectation. Probability value of 0.0028 and the t-statistics value of 4.059803 depicts that M2 has significant effect on EMP, the result shows that M2 has positive and significant effect on EMP.

The coefficient of the Exchange rate (EXR) showed a figure of -0.166103 and therefore implies that a unit increase in exchange rate will result into -0.166103 units decrease in employment rate which conforms to the stated a priori expectation. T- Statistics value of 6.708098 and probability value of 0.0001 revealed that exchange rate has a significant effect on employment rate it therefore implies that exchange rate has negative and significant effect on employment rate in Nigeria for the period under review. Liquidity rate (LR) coefficient showed a figure of -0.153877 and therefore implies that a unit increase in liquidity rate will result into -0.153877 units decrease in employment rate which conforms to the stated a priori expectation. T-Statistics value of 3.175215 and probability value of 0.0113 revealed that liquidity rate has a significant effect on employment rate it therefore implies that liquidity rate has negative and significant effect on employment rate in Nigeria for the period under review.

5.CONCLUSION AND RECOMMENDATIONS

The study evaluated effectiveness of monetary policy instruments on employment rate in Nigeria1986 to 2018. Descriptive statistics was used to explain the characteristics of the data series, after that the unit root status of the variables was established to ascertain the order of integration. The result of the analysis shows that cash reserve ratio and monetary policy rate have positive and insignificant effect, money supply has positive and significant effect while exchange rate and liquidity ratio has negative and significant effect, on the attainment of employment in Nigerian.

Based on the findings made in the course of this study, the study recommends that the Federal Government should combine fiscal and monetary policies with respect to liquidity flows in the economy to abet the control of inflation and create more jobs in the economy. Monetary policies should be used to create a favourable investment climate by facilitating the emerging of market based interest rate and exchange rate regimes that attract both domestic and foreign investments that will help create jobs in the country. Government must build an effective and sustained low interest rate intervention fund to support the real sector, especially small and medium enterprises, thereby reducing cost of production and by extension, prices of goods and services. Hence, it is recommended that policy makers in Nigeria should focus invariably on the adjustment of interest rate when considering unemployment in its monetary policy decisions.

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