



Is Monetary Policy a Veritable Tool for Tackling the Problem? Nigeria in Focus

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ABSTRACT

This paper investigated the influence of monetary policy as a veritable tool for tackling the problem of unemployment in Nigeria. In doing this, the paper used time series data ranging from 1981 to 2017. The ordinary least squares (OLS) method was used in the analysis. The Augmented Dickey-Fuller (ADF) unit root test was employed in testing the stationarity property of the series and revealed that all the variables were stationary at first difference. This therefore necessitated the test for cointegration using the Johansen cointegration test of which both the Trace statistic and Max-Eigen statistic showed 2 and 1 cointegrating equation(s) respectively. This therefore justified the use of the Error Correction Mechanism (ECM) in the study. Findings of this paper showed that monetary policy rate (MPR), money supply (MS), Gross Domestic Product (GDP), and Credit to private sector (CPS) had an inverse and significant influence on unemployment in Nigeria within the study period. Also, the existence of cointegrating equations showed that there is a long run relationship between unemployment and the explanatory variables used in this study. It is from these findings that this paper recommended that emphasis should be laid on aggressively pursuing entrepreneurial development and increased productivity by focusing on investment, employment generation and economic growth that has mechanism to trickle down to the masses.

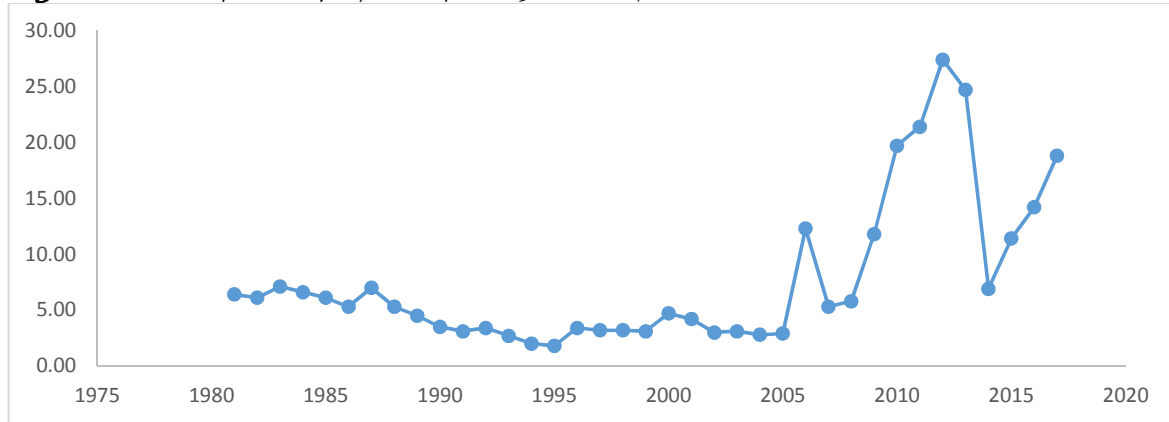
Key words: Monetary Policy, Unemployment, Economic Policies, Influence

INTRODUCTION

Every nation, whether less developed or more developed, aims at stabilizing its economy either by monetary policy, fiscal policy, and trade policy. Such stabilization policies are geared towards curbing inflation, promoting economic growth, ensuring full employment, and achieving a favourable balance of payments. At one time or another, governments around the world have tried to use monetary policy to achieve conceivable economic and social objectives. Economic growth and employment have often been high on the list of objectives of monetary policy (Brash, 1994). One can therefore try to bring the objective of full employment to bare. Despite monetary policy changes, unemployment has been on the rising creating a loss in output as reported by Muhammad (2011). Unemployment rate stood at 6.40% in 1981 but decreased to 1.80% in 1995 and averaged 4.73% within the period. It further took a toll from 3.40% in 1996 to 19.70% in 2010 averaging 5.90% and then, from 21.40% in 2011 to 18.80% in 2017 averaging 17.83% within the period (ILO, 2017). A snapshot of this is depicted in figure 1 below.



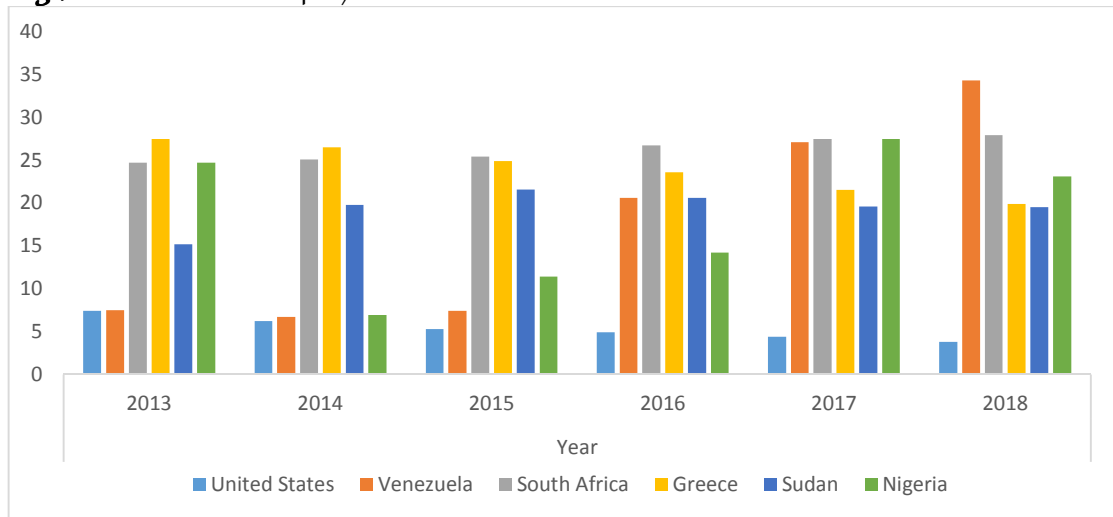
Figure 1: Trend of Unemployment from 1981 to 2017



Source: Author's Computation

With global unemployment projected to reach over 215 million by 2018, experts fear that Africa, particularly Nigeria's share of the global scourge might increase disproportionately, with attendant unsavoury consequences unless the country immediately adopts pro-active and holistic approach to halt the rising youth unemployment (Innocent, 2014). Salif, Tajudeen, Juliana, and Abiola (2014) also reported a statement credited to the Director-General, West African Institute for Financial and Economic Management (WAIFEM), Prof Akpan H. Ekpo, that despite the 'healthy growth' of the economy in Nigeria, unemployment has been rising with increased incidence of poverty, noting that Nigeria's rising unemployment is "a looming time bomb and a national crisis". A global look at unemployment rate shows that Nigeria is still a giant when it comes to unemployment issues although the country is doing better than others. A picture can speak better.

Figure 2: Global Unemployment Statistics



Source: Authors' Computation from data of IMF: World Economic Outlook (WEO) Database, October 2018



The Nigerian society have been experiencing higher rate of unemployment compared to United States, Venezuela, and Sudan. The conventional tool of monetary policy to influence unemployment is to modify the near-term path of interest rates, including a reduction in current short-term rates and a corresponding downward shift in private-sector expectations about the future path of such rates, in order to reduce borrowing rates for households and businesses (Raskin, 2011). The link between monetary policy and unemployment here is that the power of the companies to realize easier access to loan and credit facilities can function as a method for them not to solely continue their operations, but to also function as a room for expansion. Where this is often the case, such businesses would not have the cause to extend the speed of unemployment by shedding their employees in times of economic downturns. The contrary is that the aim within the applying associate expansionary financial policy since this can function as a method for the companies to not solely retain their staff, however to conjointly rent additional owing to a probable enlargement (Amassoma and Esther, 2015).

Despite the above, it is noticeable that the monetary policy enforced within the economy over the past years has been detrimental to and inconsistent with the departmental need of the economy as observed by Apata, (2007) quoted in Amassoma and Esther (2015). This concern has exerted pressures on the national monetary authorities in Nigeria to re-examine and re-evaluate their domestic monetary policies with the view of finding possible solutions. The monetary authority has so far been on the verge of tackling unemployment in the country but evidence from data on unemployment has shown that the problem of unemployment is widespread and rampant in the Nigerian society. One can therefore seek to investigate whether monetary policy is or is not effective in tackling the problem of unemployment. Simply put, do monetary policy influence unemployment in Nigeria? Do money supply, prime lending rate, and credit to private sector influence unemployment in Nigeria? It is in this light that this paper seeks to investigate the influence of monetary policy as a veritable tool for tackling unemployment in Nigeria. Thus, the broad objective of this paper is to investigate the influence of monetary policy on unemployment in Nigeria while the specific objectives are:

- i. To investigate the influence of money supply, monetary policy rate, and prime lending rate on unemployment in Nigeria,
- ii. To ascertain the influence of credit to private sector on unemployment, and
- iii. To ascertain whether there exist a long-run relationship between unemployment and monetary policy variables.

This paper is structured in five sections. Section 1 introduces the paper; section 2 captures the literature review; section 3 captures the methodology; section 4 deals with the empirical findings; and section 5 focuses on conclusion and recommendations. The study uses data ranging from 1981 to 2017.

LITERATURE REVIEW

Conceptual Clarification

The two key concepts to be defined here are monetary policy and unemployment.



Monetary Policy

Monetary policy refers to the credit control measures adopted by the central bank of a country (Jhingan, 2011). It is any conscious action undertaken by the monetary authority to change the quantity, availability or cost of money (Shaw, 1985). To Afolabi (1998), they are those measures taken by the monetary authorities to control the cost, quantity and direction of credit to achieve national objectives. This is aimed at achieving full employment, price stability, economic growth, and maintaining balance of payments equilibrium. In doing this, the monetary authority targets the money supply, availability of credit, and interest rate using tools like bank rate, open market operations, changes in reserve ratio, and selective credit control.

Unemployment

In 1954, statisticians of work attended an international conference by the International Labour Organization (ILO) and adopted a definition for unemployment which was later modified in 1982. The three conditions which must be fulfilled to be declared unemployed from a specified age and during the reference period are:

- i. To be without work, that is without paid or non-paid work,
- ii. To be currently available for work, either paid or non-paid work,
- iii. To be in the process of seeking work.

Unemployment rate is given by the number of people fulfilling those three conditions in percentage of civil active population. Balogun (2003) defined unemployment as the percentage of the labour force that is without job, but is able and willing to work. The National Bureau of Statistics view it as the proportion of the labour force that is available for work but did not work for at least 37 hours in the week preceding the survey. To Dayomi (1992) and Osinubi (2006), unemployment is as a result of inability to develop and utilize the nation's manpower resources effectively, especially in the rural sector. This act of underutilization of manpower brings about economic waste and cause human suffering (Lipsey, 1963).

Theoretical Literature

The Monetarists, Keynesians and the Hayek School clearly state the relationship between monetary policy and unemployment. In the Keynesian theory, monetary policy is a key tool of economic management thus, employment depends on effective demand; demand encourages output; output on the other hand creates income while income provides employment hence they saw the relationship between monetary policy and unemployment as a vicious circle because Keynes himself regarded employment as a function of income making him to therefore argue that the aggregate demand function is what is needed to fight depression and unemployment. (Ekwe, 2018). The Keynesians believe that monetary policy should be directed towards interest rates rather than money supply and that it should be subsidiary to fiscal policy, while the monetarists argue that the control of money supply should be the main concern of the monetary authorities (Sullivan and Steven, 2003). The Great Depression brought the Keynesian School and the Hayek Economist to a differing view as it pertains to monetary policy and unemployment. The Keynesian economists often debates that unemployment is a natural consequence



that can be reduced through some combination of two approaches: “a reduction in interest rates (monetary policy), and Government investment in infrastructure (fiscal policy)”, while the Hayek economists argued that this Keynesian policy of reducing unemployment would result in inflation and that money supply would have to be increased by the central bank to keep levels of unemployment low, which would in turn keep increasing inflation (Blinder, 2008). Thus, the leading advocates of creating central banks that act as monetary authorities in all nations in the 1920s were visionary in their research on the influence of monetary policies on economic and employment stability (Fleming and Enders (1995) in Essien, et al., 2016).

In using monetary policy to curb unemployment, the expansionary monetary policy is adopted. This policy is geared towards increasing the volume of money supply. As the money supply increases, there will be a pressure on the interest rate to go down. This downward movement of interest rate (which is the cost of capital) present a green light to the investors to borrow more. With high volume of money in the hands of the investors through borrowing, these funds are therefore invested in viable economic activities. Using the simple Keynesian national income identity of $Y = C + I + G$, where Y is the aggregate demand (income), C is the household consumption expenditure, I is the household investment expenditure, and G is the government spending on consumption and investment; an increase in investment as a result of a decrease in the cost of capital (interest rate) will lead to an increase in aggregate demand. Hence, there will be more demand for labour to produce such an increase thereby leading to higher level of employment and thus, lower unemployment.

Empirical Literature

Friorentini and Tamborini (1999) examined the effects of long-run bank lending channel for Italian economy using an inter-temporal macroeconomic equilibrium model. The result showed a permanent effect of credit variables on employment and output through the supply side of the economy by altering credit supply conditions to firms. Ordine and Rose (2008) in their part also evaluated the relationship between bank loans efficiency and employment for Italy through credit channel and found that a 10% increase in banking sector supply of credit increases employment rate by 5%. In Turkey, Cambazoğlu and Karaalp (2012) analysed the effectiveness of narrow credit view on employment and output using money supply, total loans, employment rates and industrial production index monthly variables in a vector autoregressive (VAR) framework. It was found that changes in money stock (M_2) impacts on employment and output. Loganathan, Ishak, and Mori (2012) analysed the integration and dynamic interaction between monetary shock and overall unemployment in Malaysia for the period of 1980-2010. The study applied various unit root tests, Gregory-Hansen cointegration test, VECM and Granger causality test while considering the possibility of the structural break. The results show a structural break in the middle of 1990s with a long run co-integration between monetary shock and unemployment. However, there was no causality relation between both variables.



Aliero, Ibrahim, and Shuaibu (2013) examined the relationship between financial sector development and unemployment with a time series data from 1980 to 2011 in an auto regressive distributed lag framework. The study reported a persistent unemployment in Nigeria and concluded that formal credit allocation in rural areas has both short run and long run effect in reducing unemployment. The study recommends that monetary authority be strengthened and financial services be deepened, particularly deposit money banks, to provide necessary credit facilities to the teeming unemployed youth in the country. Göçer (2013) examines the relationship between changes in money supply in terms of total lending of the banking sector and unemployment in fourteen selected European Union countries for the 1980-2012 period using panel data analysis method that takes into consideration structural breaks and cross-section dependence. The analysis shows a reduction in unemployment rate in these countries being attributed to increase in lending. Anthanasios (2013) looked at the effect of fiscal policy on unemployment in Greece using the SVAR methodology. Their findings reveal that reduction in government purchases, particular in government consumption can have high effect on unemployment. They also found tax hikes to reduce output and increase unemployment and that monetary policy impacts output and unemployment rate in a more sizeable manner when it has to do with the post crisis period of Greece economy.

Attamah, Anthony, and Ukpere (2015) investigated the impact of fiscal and monetary policies on unemployment Problem in Nigeria using time series data that covers 1980 to 2013. They employed Ordinary Least Squares (OLS) technique and unit root of the series were examined using the Augmented Dickey-Fuller after which the co-integration tests was conducted using the Engle Granger approach. Error correction models were estimated to take care of the short run dynamics. They found out that while government expenditure had a positive relationship with unemployment problem in Nigeria, the result of government revenue was negative and insignificant on unemployment problem. For monetary policy, it was found that money supply and exchange rate had positive and significant impact while interest rate has only a positive relationship on unemployment problem in Nigeria. They recommended that for an effective combat to unemployment problem in Nigeria, there should be a systematic diversion of strategies, thus more emphasis should be laid on aggressively pursuing entrepreneurial development and increased productivity. Amassoma and Esther (2015) in their attempt to ascertain the effectiveness of monetary policy in reducing unemployment rate in Nigeria used data spanning from 1970-2013. The study utilized multiple regressions approach and error correction model to examine the effect of some key monetary policy variables on unemployment in Nigeria. Evidence from the result shows that exchange rate and consumer's price index are the only monetary policy variables that influence unemployment rate while others do not. The results equally showed that there is a unidirectional causality between monetary policy variable and unemployment rate which runs from exchange rate to unemployment. Sequel from the above, the study therefore recommends that, the monetary authorities via central bank of Nigeria should ensure some reasonable monetary policy stands that would be suitable in reducing interest rate in the economy.



Essien, Manya, Arigo, Bassey, Suleiman, Ogunyinka, Ojegwo, and Ogbuehi (2016) attempted to investigate whether there is a dynamic relationship between monetary policy and unemployment in Nigeria using a vector autoregressive (VAR) framework for the first quarter of 1983 to the first quarter of 2014. They found out 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. They recommended that policy makers in Nigeria should focus invariably on the adjustment of interest rate when considering unemployment in its monetary policy decisions. Ekwe (2018) in his study, investigated the impact of monetary policies on Nigeria's unemployment with emphasis on lessons for poverty reduction in Nigeria. He adopted the Augmented Dickey-Fuller technique to determine the stationarity of the variables as well as the Error Correction Mechanism. His findings were that Treasury bill rate and money supply have positive relationship with unemployment in Nigeria, that there is a negative relationship between monetary policy rate and exchange rate with unemployment in Nigeria. The study concludes that there is a significant negative impact of monetary policies on Nigeria's unemployment, which if not checked will continue to hinder the success of the fight against poverty in the nation.

Summary of Literature Reviewed

The summary is presented below:

Table 1: Summary of Literature Reviewed

Author/year	Period	Method	Findings
Ekwe, 2018	1981 - 2016	ADF ECM	Significant negative impact of monetary policies on Nigeria's unemployment
Essien et al., 2016	1983Q1 to 2014Q1	VAR	Existence of a dynamic relationship between monetary policy and unemployment.
Amassoma and Esther, 2015	1970 - 2013	OLS Granger causality	Exchange rate and consumer's price index are the only monetary policy variables that influence unemployment rate.
Attamah, Anthony, and Ukpere, 2015	1980 - 2013	ADF OLS Granger Causality ECM	Money supply and exchange rate had positive and significant impact while interest rate has only a positive relationship on unemployment.
Göçer, 2013	1980 - 2012	Panel data analysis	Reduction in unemployment rate in these countries being attributed to increase in lending.
Aliero et al., 2013	1980 - 2011	ARDL	Formal credit allocation in rural areas has both short run and long run effect in reducing



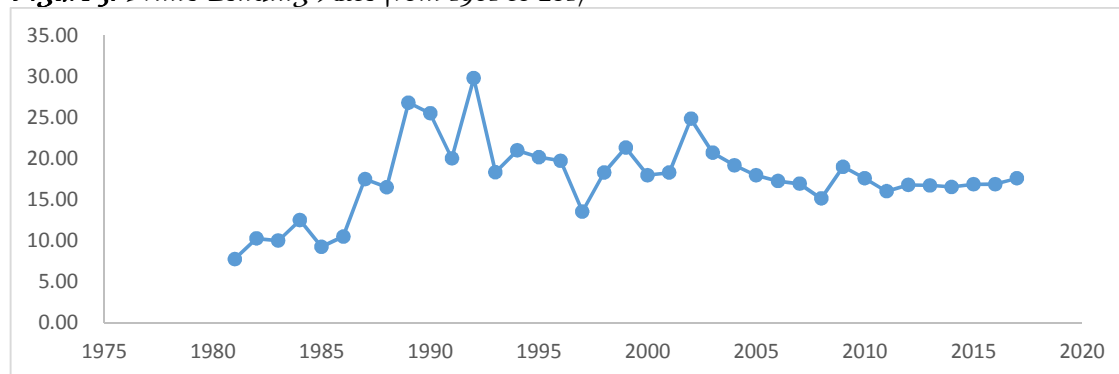
			unemployment.
Loganathan et al., 2012	1980 - 2010	ADF Cointegration VECM Granger causality	Long run co-integration between monetary shock and unemployment.
Cambazoğlu and Karaalp, 2012		VAR	Changes in money stock (M_2) impacts on employment and output.
Friorentini and Tamborini, 1999		Inter-temporal macroeconomic equilibrium model	Permanent effect of credit variables on employment and output through the supply side of the economy by altering credit supply conditions to firms.

From the table 1 above, it is observed that monetary policy has been significant in influencing unemployment both in the short run and long run. The methods have been different and so were their conclusions. This paper takes its inspiration from Ekwe (2018) and adopts the ADF, Johansen Cointegration test as well as going ahead to investigate the long run relationship using the ECM. However, this paper introduces other monetary variables as a modification to the model employed by Ekwe (2018).

Monetary Policy in Nigeria (1981 to 2017)

Several monetary policy tools such as the open market operations, bank rate policy, changes in reserve ratio, selective credit controls and moral suasion are employed by the monetary authority to regulate the supply of money in the economy. These tools work through the transmission mechanisms. In Nigeria, the Central Bank has been at the forefront of regulating the supply of money in the country. For instance, the prime lending rate has been put on a close watch. From 1981 to 1999, the prime lending rate ranges from 7.50% to 29.80% so as contract or expand the credit creation ability of the commercial banks (CBN, 2017). The trend is depicted in figure 3 below.

Figure 3: Prime Lending Rate from 1981 to 2017

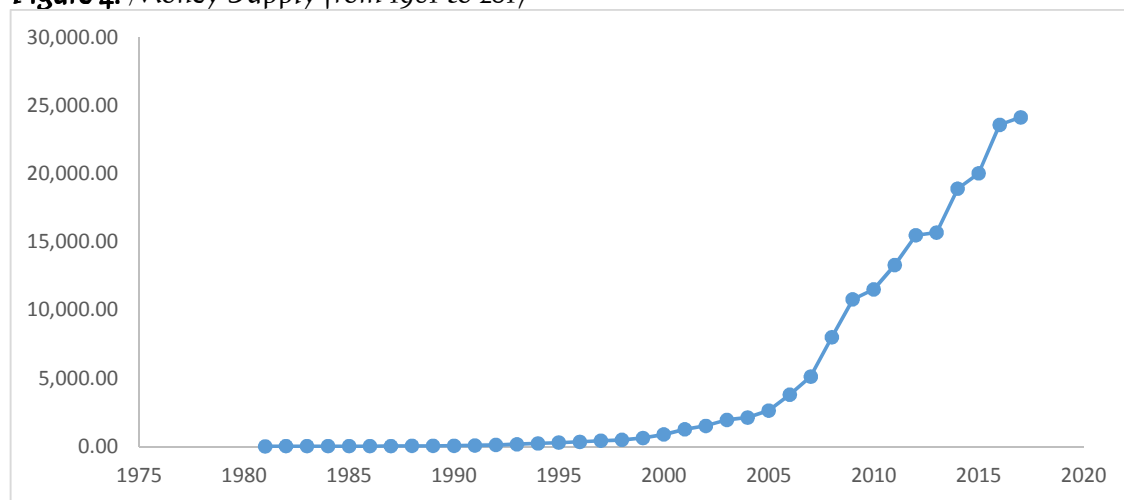


Source: Authors' Computation



As evidenced in figure 3 above, the prime lending rate has been following an ups and downs swings from 1981 to 2017 indicating some policy response of the Central Bank of Nigeria to regulating the credit creation capacity of the commercial banks. Broad money supply (M_2) has been on the increase right from 1981 to 2017. The value stood at 14.47 billion in 1981 but increased to 45.90 billion in 1989 indicating that the value even grew by more than two times 100%. For the period 1990 to 2010, the value stood at 52.86 billion and 11,525.53 billion respectively averaging 2496.02 billion; and between 2011 to 2017, the value stood at 13,303.49 billion and 24,140.63 billion respectively indicating a 81.46% increase. Such trend can be depicted in figure 4 below.

Figure 4: Money Supply from 1981 to 2017



Source: Authors' Computation

As evidenced from the graph above, money supply has been increasing steadily from 1981 to 2004 and later, it took a fast and sharp increase from 2005 to 2017. This drastic increase has been skyrocketing the rate of inflation (CPI for food) in the country to be rising. For instance, in 2001 the CPI for food averaged 39.57, increased to 109.93 in 2010 and further increased to 244.75 in 2017 (CBN, 2017). In pursuing a strategy of monetary targeting, the central bank announces that it will achieve a certain value (the target) of the annual growth rate of a monetary aggregate, such as a 5% growth rate of M_1+ or a 6% growth rate of M_2+ . The central bank then is accountable for hitting the target. The targets and actual outcome of monetary policy are given in the table below:

Table 2: Monetary policy targets and outcomes

Variables	2012	2013	2014	2015	2016	2017
M_2						
Actual	16.39	1.32	7.20	5.90	17.78	1.74
Target	24.64	15.20	14.52	15.24	10.98	10.29
M_1						
Actual	9.59	-5.23	-11.10	24.14	31.50	-2.09
Target	-	-	-	-	11.34	11.07



CPS

Actual	6.83	6.86	2.89	3.28	17.42	1.40
Target	47.50	17.52	15.85	26.06	13.28	14.89

Source: CBN Bulletin, 2017

Following the table 2 above, it is clear that the monetary targeting for the three variables is not often met. Targets were either not reached or were met above the expected. For instance, targets on M_2 were not met in 2012, 2013, 2014, 2015 and 2017 but was above target in 2016. Similarly, targets on M_1 was met above as expected for 2016 and 2017 although data is not available for 2012 to 2015. The targets on credit to private sector (CPS) is also seen to be higher than the actual for 2012 to 2017 except in 2016. We can therefore say that the Central Bank of Nigeria achieved 16.67% of her targets on M_2 and CPS within the review period.

METHODOLOGY

Basic Research Design

This study uses secondary data from several data sources. The time series data ranging from 1981 to 2017 are analysed using the econometric approach.

Sources of Data

This paper employs secondary data obtained from the Central Bank of Nigeria (CBN), World Economic Outlook, International Labour Organisation (ILO), and the National Bureau of Statistics (NBS) in investigating the influence of monetary policy on unemployment in Nigeria from 1981 to 2017. Data on prime lending rate (PLR), monetary policy rate (MPR), money supply (MS), exchange rate (EXC), and credit to private sector (CPS) were obtained from the 2017 CBN Statistical Bulletin; while data on unemployment (UNM) were obtained from the NBS and ILO; and data on selected countries of the world unemployment rate was obtained from World Economic Outlook, 2018.

Analytical Technique

This paper employs the ordinary least square (OLS) method of regression analysis and the data is analysed using Eviews software package. However, the series are tested for unit root by employing the Augmented Dickey-Fuller test technique. In testing for the presence of long-run relationship, the paper adopts the Johansen Co-integration test. The presence of co-integrating equations thereby warrants the use of the error correction mechanism.

Model Specification

Unemployment (UNM) is the dependent variable while broad money supply (MS), credit to private sector (CPS), prime lending rate (PLR), exchange rate (EXC), real gross domestic product (GDP), and monetary policy rate (MPR) are the independent variables. This paper adopts the model of Ekwe (2018) with little modifications. The original model is specified thus:



$\text{Log}(\text{unemp}) = \beta_0 + \beta_1 \log(\text{TBR}) + \beta_2 \log(\text{MSP}) + \beta_3 \log(\text{MPR}) + \beta_4 \log(\text{EXR}) + \mu$
 Where: unemp = unemployment rate; TBR = treasury bill rate; MSP = money supply;
 MPR = monetary policy rate and EXR = exchange rate.

With modifications, the model for this study is given as follows:

$$\text{UNM} = f(\text{PLR}, \text{MPR}, \text{MS}, \text{GDP}, \text{EXC}, \text{CPS}) \text{ ----- (1)}$$

Which transforms to,

$$\text{UNM} = \beta_0 + \beta_1 \text{PLR} + \beta_2 \text{MPR} + \beta_3 \text{MS} + \beta_4 \text{GDP} + \beta_5 \text{EXC} + \beta_6 \text{CPS} + \mu \text{ ----- (2)}$$

where: UNM = unemployment rate;

PLR = prime lending rate;

MPR = monetary policy rate;

MS = Broad Money supply;

GDP = Gross Domestic product at 2010 constant prices;

EXC = exchange rate; and

CPS = credit to private sector.

β_0 to β_6 are the parameters to be estimated.

It is expected that $\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 < 0$, $\beta_4 < 0$, $\beta_5 > 0$, and $\beta_6 < 0$.

EMPIRICAL FINDINGS

Unit Root Test

The ADF unit root test is presented in table 1 below:

Table 3: Augmented Dickey – Fuller Test Result

Augmented Dickey – Fuller (ADF) Test			
Variables	Level	First Difference	Order of Integration
PLR	-3.2479*	-5.7040***	I(1)
MPR	-3.4564*	-8.1954***	I(1)
MS	-0.8267	-3.2268*	I(1)
GDP	-2.4213	-3.2593*	I(1)
EXC	-1.3386	-5.4109***	I(1)
CPS	-1.6432	-4.3427***	I(1)
UNM	-2.2045	-6.9221***	I(1)
Critical Values: 1% = -4.2436			
5% = -3.5443			
10% = -3.2047			

Note: *, **, *** denote significance at 10%, 5%, and 1% respectively

Source: Author's computation using Eviews 7.

The table 3 above shows that all the variables except PLR and MPR are stationary at first difference. It therefore implies that using such variables in estimation at their level will yield a spurious regression result hence, the use of co-integration test to check whether there exist a long-run relationship becomes necessary.

Co-integration Test

The Johansen co-integration test result is depicted in table 3 below.



Table 4: Co-integration Test Result

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Value	Critical	Probability
None *	0.8424	170.0941	125.6154		0.0000
At most 1 *	0.6800	105.4268	95.7537		0.0092
At most 2	0.6102	65.5421	69.8189		0.1046
At most 3	0.3415	32.5665	47.8561		0.5808
At most 4	0.2494	17.9433	29.7971		0.5703
At most 5	0.1576	7.9005	15.4947		0.4761
At most 6	0.0528	1.8977	3.8415		0.1683

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Value	Critical	Probability
None *	0.8424	64.6672	46.2314		0.0002
At most 1	0.6800	39.8847	40.0776		0.0526
At most 2	0.6102	32.9757	33.8769		0.0638
At most 3	0.3415	14.6231	27.5843		0.7774
At most 4	0.2494	10.0428	21.1316		0.7407
At most 5	0.1576	6.0028	14.2646		0.6128
At most 6	0.0528	1.8977	3.8415		0.1683

Source: Author's computation using Eviews 7.

Table 4 above shows that there exist a long run-relationship. The trace statistic indicates two co-integrating equations (CE(s)) while the Max-Eigen statistic reports one co-integrating equation. This therefore necessitates the adoption of the error correction model (ECM).

Error Correction Model

The result is presented thus:

Table 5: The Error Correction Model Result

Variables	Coefficient	Standard Error	t-Statistic	Probability
C	16.255	5.3088	3.0619	0.0048
PLR	0.2793	0.3664	0.7623	0.4522
MPR	-0.4311	0.1738	-2.4798	0.0194
D(MS)	-1.4205	0.5687	-2.4979	0.0186
D(GDP)	-2.2149	0.6345	-3.4907	0.0016
D(EXC)	-0.0067	0.1900	-0.0353	0.9721
D(CPS)	-1.0406	0.4910	-2.1191	0.0431
ECM-1	-0.5234	0.1065	4.9146	0.0000

$R^2 = 0.8501$ Adjusted $R^2 = 0.8128$ Durbin-Watson = 1.7943
 F-Statistic = 22.7162 Probability of F-Statistic = 0.0000

Source: Author's computation using Eviews 7.

The result from table 5 above shows that Monetary Policy Rate (MPR), money supply (MS), Gross Domestic Product (GDP), and credit to private sector (CPS) have a



significant influence on unemployment in Nigeria at 5% level as shown by their probability values of 0.0194, 0.0186, 0.0016 and 0.0431 respectively. Gross Domestic Product (GDP), Monetary Policy Rate (MPR), Money Supply (MS) and credit to private sector (CPS) are seen to have an inverse relationship with unemployment. Thus, for a unit percentage increase in MPR and MS, the rate of unemployment will on the average decrease by 0.43% and 1.42% respectively. Also, for a unit percentage increase in GDP and CPS, the rate of unemployment will decrease by 2.21% and 1.04% respectively. Similarly, prime lending rate and exchange rate are seen to have an insignificant influence on unemployment. Their a priori expectations are also met. The R^2 value of 0.8501 shows that the explanatory variables explain 85.01% of the total variations in the rate of unemployment while the other 14.99% are explained by other factors not captured in the model. The adjusted R^2 of 0.8128 shows that the explanatory variables explain 81.28% of the total variations in unemployment after being adjusted for the degree of freedom. The F – statistic of 22.7162 is high and significant at the 1% level as shown by the probability value of 0.00. This implies that the overall model is significant. The Durbin Watson statistic of 1.7943 which is approximately 2.0 shows the absence of serial correlation in the model.

Note: Testing the hypothesis as prescribed in section 1 of this paper is inherently done using the probability values in table 5 corresponding to each of the coefficients. Since monetary policy rate, credit to private sector, and money supply are statistically significant, the null hypothesis that there exist no significant influence between:

- i. Monetary policy rate and unemployment,
- ii. Credit to private sector and unemployment,
- iii. Money supply and unemployment are rejected at the 5% level of significance.

Similarly, the null hypothesis that prime lending rate do not significantly influence unemployment is accepted. Hence, one can conclude that there is no significant influence of prime lending rate on unemployment in Nigeria within the study period. The presence of co-integrating equations therefore leads to the rejection of the null hypothesis that there is no long run relationship between unemployment and monetary policy.

Error Correction Mechanism (ECM) Result

The result of the ECM shows that the coefficient of the estimate carries the normal negative sign (-0.5234) which implies that the result is reliable. It is also highly statistically significant at 1 percent level. The negativity of the ECM signals that the system is stable enough and is capable of converging to the long run equilibrium after some shocks/disturbances in the system. The results of the ECM shows that the short-run dynamics restores back to long-run equilibrium at 52.34%. This shows that the speed of the adjustment to long-run equilibrium is not fast but slightly above average.

DISCUSSION OF FINDINGS

Starting with the GDP, one can therefore ask: What is the relationship between unemployment and economic growth? Going by the words of Walterskirchen (1999), the



simple, but wrong argument is: "There can be no negative relationship between unemployment and growth because GDP and unemployment are both rising in the long run". Other things being equal, the greater the amount of goods and services produced, the greater the labour required for production; because economic growth and employment go hand in hand. But there is also the notion that higher productivity could mean fewer jobs. There is often a failure to distinguish between increases in output that are due to higher capacity utilization and those that are due to long term growth (Calmfors and Holmlund, 2000). Labour market reforms that lower wage causes and thus increase employment will also cause output to grow during the adjustment process. The output increase will be reinforced with a lag by increase in the capital stock, because investment will be more profitable when the return to capital increases. This leads to increases in labour productivity and to further increase in labour demand. The result obtained in this paper therefore shows that economic growth has a greater influence on unemployment. A 1% increase in GDP results in a 2.21% decrease in unemployment. Increase in money supply implies an expansionary monetary policy. This leads to a decline in the rate of interest which hitherto culminates to incentives to borrow for investment. Investment creates employment opportunities and hence, leads to a reduction in unemployment. One needs to note that such increase in money supply can lead to a rise in the general price level resulting in a crowding out effect, thereby making the objective of employment creation ineffective. Economist refers to this as the unemployment-inflation trade-off.

The prime lending rate (PLR) is seen to be the cost of capital. Higher prime lending rate discourages people to borrow for investment. Low investment culminates to low employment opportunities in the country leading to unemployment. This study reveals that prime lending rate has no significant influence on unemployment. From 1990 to 2005, PLR averaged 20.42 but unemployment averaged 3.13% and between 2006 to 2017 PLR averaged 16.94 but unemployment averaged 14.98%. This is against the normal belief that higher PLR leads to higher unemployment as evidenced from the statistics. Credit to private sector (CPS) is also observed to have a significant influence on unemployment. This is attributed to fact that credit to private sector boost investment which eventually culminates to increase in employment. The monetary policy rate (MPR) is also seen to have a significant influence on unemployment. A lower policy rate implies a tight monetary policy while a higher policy rate implies an expansionary monetary policy. The MPR determines interest rate which is a crucial variable in an investment decision. It is observed that MPR averaged 10.29 between 2010 to 2017 as against 12.81 between 2001 to 2009. Unemployment averaged 5.69 between 2001 to 2009 as against 18.06 between 2010 and 2017. The high average unemployment between 2010 and 2017 can therefore be attributed to low average MPR. Since money supply, monetary policy rate, and credit to private sector have significant influence on unemployment in Nigeria within the study period, the broad objective of this study is therefore achieved and it is seen that monetary policy significantly influence unemployment in Nigeria.



CONCLUSION AND RECOMMENDATIONS

Clearly, a country that is unable to develop the skills and knowledge of its people and utilize them effectively in the national economy is unable to develop anything else (Harbison, 1973). Most economists now accept that there are clear limits to what monetary policy can do to help lower unemployment. Monetary policy does have a clear part to play, and an important one. But it is not a tool we should use directly to stimulate growth or employment. The best contribution monetary policy can make to growth and employment is to maintain stability in the general level of prices. However, the wishful thinking that often underlies attempts to use monetary policy to stimulate activity and employment has not disappeared. Within public and political circles alike there is still a belief that monetary policy could do more to reduce unemployment than simply dealing with inflation (Brash, 1994). This study reveals that money supply, monetary policy rate, and GDP significantly influence unemployment in Nigeria. It also reveals the existence of a long run relationship between unemployment and monetary policy variables. Since money supply, monetary policy rate, and credit to private sector have significant influence on unemployment in Nigeria within the study period, the broad objective of this study is therefore achieved and it is seen that monetary policy significantly influence unemployment in Nigeria. It is therefore recommended that the monetary authorities should ensure reasonable monetary policy stand that will be suitable to reduce interest rate in an economy. For example, if government reduce interest rate it will give investors an opportunity to get contracts which will increase the number of labourers, this will bring about increase in employment thereby decreasing unemployment. This should be balanced with the setting up of unemployment benefit scheme so as to mellow down the excessive difficulties that unemployment poses on the lives of the citizens.

The monetary authorities should also make exchange rate stable to ensure that unemployment do not rise. They should also ensure price stability that will ensure sustainable investment that can enhance employment opportunities. Since higher money supply result in lower unemployment, it is therefore also recommended that the regulating bodies should employ all standard methods of checking inflation by targeting equilibrium between money supply, Treasury bill rate and exchange rate, and maintaining same. For an effective combating of unemployment problem in Nigeria, there should be a systematic diversion of strategies. Thus more emphasis should be laid on aggressively pursuing entrepreneurial development and increased productivity. Again government should aggressively focus on investment, employment generation and economic growth that has mechanism to trickle down to the masses. More than that, foreign and domestic investors should be encouraged to invest in the industrial sector and agriculture to help in diversifying the economy and hence increase the employment generation. The government should also abstain from her see-saw behaviours towards the problem of unemployment in the country. The N-Power is one of such see-saw behaviours. The N-Power is just a policies aimed at enhancing the welfare and employability of youths but such policy should preferably be undertaken in the broader context by embarking on policies aimed at enhancing the overall labour absorption capacity of citizens of the country.



REFERENCES

- Afolabi, L. (1998). *Monetary Economics*. (Revised Edition). Abuja, Nigeria: Perry Barr Ltd., p. 280.
- Aliero, H. M., Ibrahim, S. S. and Shuaibu, M. (2013). An Empirical Investigation into the Relationship between Financial Sector Development and Unemployment in Nigeria. *Asian Economic and Financial Review*, 3(10), 1361-1370.
- Amassoma, D. and Esther, F. O. (2015). The Efficacy of Monetary Policy Variables in Reducing Unemployment Rate in Nigeria. *International Finance and Banking*, 2(2), 52 – 71.
- Anthanasios, O. T. (2013). The Unemployment Effects of Fiscal Policy: Recent evidence from Greece. *Iza Journal of European Labour Studies*, 2(11), pp. 234 – 253.
- Attamah, N., Anthony, I. and Ukpere, W. I. (2015). The Impact of Fiscal and Monetary Policies on Unemployment Problem in Nigeria (Managerial Economic Perspective). *Risk Governance and Control: Financial Markets and Institutions*, 5(2).
- Brash, D. T. (1994). The Role of Monetary Policy: Where Does Unemployment Fit in? In J. Hole and Wyoming (Eds.), a Paper Presented at the Federal Reserve Bank of Kansas City's symposium on "Reducing Unemployment: Current Issues and Policy Options".
- Calmfors, L. and Holmlund, B. (2000). Unemployment and Economic Growth: A Partial Survey. *Swedish economic policy review*, 7, pp, 107 – 153.
- Cambazoğlu, B. and Karaalp, H.S. (2012). The Effect of Monetary Policy Shock on Employment and Output: The Case of Turkey. *International Journal of Emerging Sciences*, 2(1), 23-29.
- Central Bank of Nigeria (2017). Statistical Bulletin.
- Ekwe, E. I. (2018). The Impact of Monetary Policies on Nigeria's Unemployment: Lessons for Poverty Reduction in Nigeria. *Equatorial Journal of Finance and Management Sciences*, 3 (1), pp. 1 – 16.
- Essien, S. N., Many, G. A., Arigo, M. O. A., Basse, K. J., Suleiman, B. I., Ogunyinka, F., Ojegwo, D. G., and Ogbuehi, F. (2016). Monetary Policy and Unemployment in Nigeria: Is there a Dynamic Relationship? *CBN Journal of Applied Statistics* Vol. 7, No. 1(b), pp. 209 – 231.
- Friorentini, R. and Tamborini R. (1999). Monetary Policy, Credit and Aggregate Supply: The Evidence from Italy. *Paper presented at the Royal Economic Society Conference, Nottingham*.
- Fleming, G. and Endres, A. M. (1995). The ILO Economists and International Economic Policy in the Interwar Years. *International Labour Review*, Vol. 135, 207–225.
- Göçer, I. (2013). Relation between Bank Loans and Unemployment in the European Countries. *European Academic Research*, 1(6), pp. 981 – 995.
- Harbison, F. (1973). *Human Resources in Wealth of Nations*. New York: Oxford University Press, p. 3.
- Innocent, E.O. (2014). Unemployment Rate in Nigeria: Agenda for Government. *Academic Journal of Interdisciplinary Studies*, 3(4), pp. 103 – 114.
- Jhingan, M. L. (2011). *Monetary Economics*. (7th Edition). Delhi, India: Vrinda



- Publications (P) Ltd.
- Keynes, J. M. (1993). *General Theory of Employment, Interest and Money*. New York: Harcourt, Brace and World, Inc.
- Loganathan, N., Ishak, Y. and Mori, K. (2012). Monetary Shock and Unstable Unemployment in Malaysia: A Dynamic Interaction Approach. *International Journal of Emerging Sciences*, 2(2), 247-258.
- Osinubi, X. (2006). *The Political Crisis and Solution*. Vanguard, July 19.
- Raskin, S. B. (2011). *Monetary Policy and Job Creation*. A Paper Presented at the University of Maryland Smith School of Business Distinguished Speaker Series, Washington, D.C., September 26.
- Salif, A., Tony M., Tajudeen, S., Juliana, U. and Abiola O. (2014). *Joblessness: Creating Vacancies for Explosion*. News World, March, 31, Pp. 14-23.
- Shaw, G. K. (1985). *An Introduction to the Theory of Macro-Economic Policy*.
- Sullivan, A. and Steven, M. S. (2003). *Economics: Principles in Action*. Upper Saddle River: Pearson Prentice Hall.
- Walterskirchen, E. (1999). *The Relationship Between Growth, Employment and Unemployment in EU*. *European Economists for an Alternative Economic Policy (TSER Network)*, Workshop in Barcelona.
- World Economic Outlook (WEO) Database, October 2018.