UNEMPLOYMENT AND ECONOMIC GROWTH IN NIGERIA

Umeh Chigozie Ambrose
Institute of Education,
University of Jos, Nigeria
marigozi@yahoo.com

ABSTRACT

This paper is motivated by the worrisome phenomenon of joblessness of thousands of Nigerian youths who are qualified to work but have no job to do. The paper investigated the relationship between unemployment and economic growth in the light of Okun's law using the autoregressive distributed lagged model ARDL model. Findings revealed that unemployment has positive and insignificant impact on economic growth in Nigeria. The study therefore recommended, that an alternative policy be formulated and applied to the Nigeria unemployment situation. Such a policy should take care of the peculiarities of the unemployment situation in Nigeria since Okun's law has proved not to be relevant and applicable in Nigeria based on the findings of this study. This study also recommended a well-balanced application of monetary and fiscal policies which should checkmate each other.

Key Words: Unemployment, Economic Growth, Okun's Law

JEL Classification: E24, O40, E12.

INTRODUCTION

Despite being endowed with diverse and infinite resources both human and material, unemployment in Nigeria is one of the most critical problems the country is facing. This is attributed to years of negligence and adverse policies that have led to the under-utilization of these resources. These resources have not been effectively utilized in order to yield maximum economic benefits (Adesina, 2013).

Prior to 1970 when crude oil was discovered in commercial quantities, Nigeria was an agrarian economy with agricultural sector accounting for over 60% of the total gross domestic product (GDP) of the economy. Agricultural sector was highly depended on for growth and development and also as a means of creating employment opportunities to unemployed labour force in the country. With the oil boom in the 1970s, the contributions of the agricultural sector to growth and development of the economy began to drop as a result of overdependence on the oil sector, resulting to neglect of critical sectors of the economy. The shift from popular agricultural activities to the oil sector led to wasteful expenditures, dislocation of employment factors and distortion in the revenue bases for policy planning in the national economy. This development led to higher unemployment and worsened the economic situation of the country (Eze, Atuma & Egbeoma, 2016).

In Nigeria, the unemployment situation has become more severe due to the laying off of workers in the banking sector, fall in outputs of most companies, civil service retrenchment and the fact that large-scale employment creation has not occurred in spite of the non-oil sector impressive growth rates of over 7% since 2002 (Billetoft, Powell & Treichel, 2008). Furthermore, this situation is worsened by the high rate of population growth as well as the rising number of people entering into the labour market for the first time. Also in Nigeria, the problem of youth unemployment has been

aggravated by the global financial crisis. As a result, the increasing unemployment rate amongst the Nigerian youths has discouraged most of them from taking part in labour market activities thereby increasing the pool of unemployed youths. In 2011, an analysis on the unemployment situation in Nigeria showed that of the total number of unemployed individuals, 43.7% were university graduates, 23.8% were polytechnic graduates and 15.5% were college undergraduates (CBN, 2012). Factors like Boko Haram insurgency, banditry, flooding and government policies on service sector, and in recent times technological innovations which favour capital-intensive methods and internet services (online business activities) have contributed to rise in unemployment rate. The resultant effect is that unemployment creates more burden as government becomes responsible for providing the public amenities and facilities which the populace cannot afford. This leads to increased expenditure (leakages) and reduced productivity, with attendant implication on economic growth. Employment generation is a significant drive of the growth rate of GDP in Nigeria (Iyoha, 1978). However, in the Nigerian economy, most employment is in the informal sector. A large proportion of the population is under self-employment with very low income (Jodie & Ogunrinola, 2011).

Total unemployment level in Nigeria in 1970 stood at 4.3% and rose to 6.4% in the 1980s (Akintoye, 2003). Odusola (2001) revealed that the national unemployment rate of Nigeria was around 6%, and increased to 7% in 1987. By 1995, the national unemployment rate declined to 1.9%, after which it increased to 2.8% and 13.1% in 1996 and 2000 respectively. Total unemployment rates in Nigeria are 8.1% and 9.01% in 2019 and 2020 respectively (World Bank, 2021) while real gross domestic product (RGDP) growth rate in 2019 and 2020 stood at 2.208% and -1.8% respectively (World Bank, 2021). Besides, Nigeria has overtime claimed strong real gross domestic product (RGDP) growth rate which measured at 6% or 6.5% from 2002 till 2015 (Kayode, Samuel & Silas, 2014). This is contrary to reality, because, while the country was recording strong growth rate of 6.5%, unemployment rate was at the same time rising and annual unemployment rate rose from 11.9% in 2005 to 19.7% in 2009, and over 37% in 2013 (Kayode, et al, 2014). In 2016, Real gross domestic product (RGDP) growth rate was -1.6% and stood at 0.8%, 1.9%, 2.2% and-1.8% in 2017, 2018, 2019 and 2020 respectively (World Bank, 2021). A situation of high growth rate accompanied with high unemployment rate is theoretically paradoxical.

Interestingly, the trend of unemployment and economic growth in Nigeria has attracted scholars who investigate the relationship between these two economic factors in what is popularly known as the Okun's law. Okun's law is an empirically observed relationship between unemployment and losses in a country's production (Ball, Griffiths, Rafferty, Lindquist, Murrells & Tishelman, 2016). Okun's law looks at the statistical relationship between GDP and unemployment. It demonstrated that when unemployment fell, the production of a country will increase. In Okun's law, an economy experiences a 1 percentage point increase in unemployment for every 3 percentage point decrease in GDP from its long-run level (also called potential GDP). Potential GDP is the level of output that can be achieved when all resources (land, labour, capital and entrepreneurial ability) are fully employed. Similarly, a 3 percentage point increase in GDP from its long-run level is associated with a 1 percentage point decrease in unemployment (Kenton, 2020). Scholars have evaluated the

link between unemployment and economic growth by either regressing output on the unemployment rate or regressing unemployment on output growth.

Therefore, this paper aims at investigating the relationship between unemployment and economic growth, a phenomenon called Okun's law. To achieve the objectives of this paper, it is structured into five sections with introduction as section one. Section two deals with conceptual, theoretical and empirical review. Section three specifies the methodology and data analysis. Section four presents the results and its interpretation, while section five concludes the paper and proffers policy recommendations.

LITERATURE REVIEW
Conceptual Review
Concept of Unemployment
While the International Labour Organization (ILO) defined the unemployed as the number of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work (World Bank, 1998); Adebayo (1999) defined it as a state in which people who can work are without jobs and are seeking for pay or profit. According to Fajana (2000), unemployment refers to a situation where people who are willing and capable of working are unable to find suitable paid employment. Unemployment exists where persons capable of and willing to work at the prevailing rate of pay are unable to find work (Ogboru, 2010). Unemployment refers to a situation in which people who are capable of working and who are qualified by age to work cannot find employment (Abefe & Nwankpa, 2012). According to Mai-lafia (2016), unemployment is a situation in which people who are capable of working on wage employment or self-employment and who are qualified by age to work legally but cannot secure employment. Therefore, unemployment is considered in this paper as a situation where people who are qualified to work, are searching for work but cannot find one to do. This definition is adopted as the working definition of unemployment for this paper because it is the definition that more closely describes the situation of unemployed persons in Nigeria as assessed in this paper.

Concept of Economic Growth
Economic growth as seen by Gadrey (2002) is the rate of increase from one period to another in the flow of goods produced and/or consumed within a given institutional space, which may be a firm, an industry, a national or regional territory. It is the quantitative change or expansion in a country's economy and is conventionally measured as the percentage increase in Gross Domestic Product (GDP) or Gross National Product (GNP) during one year (The World Bank Group, 2004). To Jhingan (2010), economic growth is a quantitative sustained increase in a country's per capita output or income accompanied by expansion in its labour force, consumption, capital and volume of trade. Haller (2012), defines economic growth as the process of increasing the sizes of national economies, the macro-economy indicators especially the GDP per capita with positive effect on the socio-economic sector. Economic growth is an increase in the production of goods and services

over a specific period (Amadeo, 2021). The concept of economic growth according to Jhingan (2010) is adopted for this study. This definition according to Jhingan (2010) is adopted as the working definition of economic growth for this paper due to the fact that it captures the concept of economic growth which is suitable for Nigeria as reflected in this paper because it is largely more encompassing.

Concept of Okun's Law
In economics, Okun's law is an empirical observed relationship between unemployment and losses in a country's production. It is named after Arthur Melvin Okun, who first proposed the relationship in 1962 (Ball, et al, 2016). The "gap version" states that for every 1% increase in the unemployment rate, a country's GDP will be roughly an additional 3% lower than its potential GDP. The "difference version" (Abel & Bernanke, 2005) describes the relationship between quarterly changes in unemployment and quarterly changes in real (GDP).

THEORETICAL REVIEW
Several theoretical orientations exist to intellectualize the situation of unemployment and economic growth. They include Keynesian and Okun theories and Endogenous Growth Theory. However, the focus of this study is on Okun's theory.

The Keynesian theory of unemployment was propounded by John Maynard Keynes in his work, *The General Theory of Employment, Interest and Money* published in 1936. The Keynesian theory of unemployment is also known as cyclical, demand deficient theory of unemployment and explains unemployment which occurs when there is inadequate aggregate demand in the economy. The theory explained that ineffective demand in an economy is the primary cause of unemployment in which those that are willing to work at prevailing wage rate are unable to find job at a given time (Obadan & Odusola, 2010).The theory argued that employment depends on effective demand which brings about increased output, output generates income and income creates employment. Employment is considered as a function of income. Effective demand is determined by aggregate demand and supply functions. The aggregate supply function depends on the technical or physical state which in the short run does not change, thus remaining stable. Therefore, employment depends on aggregate demand which in turn is influenced by consumption and investment demand respectively. The Keynesian theory also emphasized that since the number of unemployed work force would always exceed job vacancies, so that even if full employment is attained some labour force will still remain unemployed. Lack of effective demand for jobs can be resolved by intervention of government through deficit spending which can boost employment level and increases aggregate demand in the economy (Keynes, 1936).

One of the most prominent strengths of this theory is higher employment levels. In recessionary periods, businesses cut down on the size of their workforce. Lack of employment then decreases consumer demand for products and services. When government steps in to financially stimulate businesses, those companies begin to hire once again. While Keynesian theory allows for increased government spending during recessionary times, it also calls for government restraint in a rapidly

growing economy. This prevents the increase in demand that spurs inflation. It also forces the government to cut deficits and save for the next down cycle in the economy. A major weakness of the Keynesian theory is that borrowing causes higher interest rates and financial crowding out. For a government to borrow more in a recession, interest rate on bonds rises. Higher interest rates discourage investment by the private sector. Another limitation of the Keynesian theory is that if government borrows to finance higher investment, it is borrowing from the private sector and therefore, the private sector has fewer resources to finance private sector investment. Another weakness of this theory is that fiscal expansion often comes too late when the economy is recovering and, therefore causes inflation.

Okun's theory was propounded by Arthur Melvin Okun in 1962. The theory is based on the explanation of the relationship between unemployment and economic growth in an economy. It argued that unemployment has negative correlation with economic growth in any given economy. It believed that a percentage decrease in unemployment rate leads to 3 percent increase in economic growth (Okun, 1962). When the growth rate of unemployment rises by 1% above the trend of growth, it can only result to 0.3% reduction in unemployment. Output depends on the amount of labour used in the production process, so there is a positive relationship between output and employment. Total employment equals the labour force minus the unemployed, so there is a negative relationship between output and unemployment conditional on the labour force (Furhmann, 2020). Okun's law is in essence a rule of thumb to explain and analyze the relationship between jobs and growth. That rule of thumb describes the observed relationship between changes in the unemployment rate and the growth rate of real gross domestic product (GDP). Okun noted that because of ongoing increases in the size of the labour force and in the level of productivity, real GDP growth close to the rate of growth of its potential is normally required, just to hold the unemployment rate steady. To reduce the unemployment rate, therefore, the economy must grow at a pace above its potential (Bernanke, 2012). A major strength of the Okun's theory is that it was able to give precise figures in percentage in describing the inverse relationship between unemployment and economic growth. A major weakness in Okun's law is that besides unemployment, there are many other factors that affect the output of a nation. Many studies revolving around the relationship between unemployment and growth consider a wider set of variables such as the size of the labour market, working hours of employed workers and worker's productivity rates (Gordon, 2021). The Nigeria economic situation is such that indicates a high growth rate and high unemployment level with over dependence on oil as its major source of revenue. A few proportion of the country's labour force makes up this sector thereby promoting the nation with its high unemployment growth. Okun's law is therefore relevant to the Nigerian situation because it will determine whether GDP will fall when unemployment rate rises. It will investigate whether a 1% increase in unemployment rate in Nigeria will result in the lowering of its potential GDP by 3%.

The Endogenous growth theory was developed by Kenneth Arrow, Paul Romer and Robert Lucas, among other economists. The theory emerged in the 1980s and it questioned how gaps in wealth

between developed and underdeveloped countries could persist if investment in physical capital like infrastructure is subject to diminishing returns. The Endogenous growth theory stated that economic growth is mainly the outcome of endogenous and not external forces (Romer, 1994). It also stated that investment in innovation, knowledge and human capital is important because they are contributors to economic growth. In addition, it focuses on positive externalities and spillover impacts of a knowledge - based economy which leads to economic development. Essentially, this theory maintains that policy measures determine long run growth rate of an economy. For instance, education or subsidies for research and development increases the growth rate in a few endogenous growth models by raising the incentive for innovation. A major advantage of the Endogenous growth theory is that it provides a model in which all variables, in particular savings, investment and technical knowledge are the outcome of a nation's decision. The endogenous growth model or approach argues that there should be an additional effect of human capital over and above the static effect on the level of output. One of the biggest criticisms against at the endogenous growth theory is that it is impossible to validate it with empirical evidence. The theory has been criticized for being based on assumptions that cannot be accurately measured (Liberto, 2020). The endogenous growth theory is also relevant to this study and to Nigeria because it traces growth of output per capita to two main sources: savings and efficiency. In other words, it is not only factor accumulation that drives growth but also efforts to utilize it. However, this study is anchored on Okun's theory which stipulates the relationship between unemployment and economic growth in an economy with particular reference to the Nigerian economy.

EMPIRICAL REVIEW

Zaglar (2006) examined the relationship between unemployment and economic growth in the United Kingdom using microeconometric evidence and fixed-effect regression methods. Findings revealed that there was a significant and negative relationship between unemployment and economic growth in the United Kingdom. Yousefat (2011) examined the relationship between unemployment and economic growth in the Algerian economy from 1970 to 2009 employing the correlation matrix, causal and test, simultaneous integration methodology and error correction model. The findings showed the existence of a slight and inverse causal relationship between unemployment and economic growth, as well as the absence of a long or short-term balancing relationship between unemployment and economic growth rates, while the causality test revealed the existence of a causal relationship in one direction from unemployment to growth. Muhammad, Oye & Inuwa (2011) examined the impact of unemployment on gross domestic product in Nigeria over the period of nine years (2000 – 2008) using a regression analysis. Findings showed that unemployment has a significant effect (over 65%) on the making of the Nigerian GDP, and there is an inverse relationship between unemployment and gross domestic product, which implies that as unemployment increases, gross domestic product falls. Amassoma and Nwosu (2013) examined the impact of unemployment on productivity growth in Nigeria using an error correction modeling approach and co-integration technique to analyze the data used from 1986 to 2010. The regression estimate based on the short run and long run models showed that unemployment rate had an

insignificant impact on productivity growth in Nigeria over the study period. Onwanchukwu (2015) examined the impact of unemployment on economic growth in Nigeria from 1985 to 2010, using Ordinary Least Squares regression technique. His findings revealed that unemployment does not have a significant impact on the economic growth of Nigeria.

Ogueze and Odim (2015) examined the cost of unemployment and GDP growth in Nigeria. The study used annual time series data from 1970 to 2010. The variables used for the study included real GDP (RGDP), unemployment rate (UNP), interest rate (INT), investment (INV), import (IMP) and money supply (M2). The study employed Ordinary Least Square (OLS). The results showed that unemployment rate had negative impact on economic growth in Nigeria. Banda (2016) studied the relationship between unemployment and economic growth in South Africa from 1994 to 2012. The results of Johansen co-integration showed that the variables had a long run relationship. The findings revealed a favourable association between GDP and unemployment in South Africa. Eze, Atuma & Egbeoma (2016) used the cointegration test, the Vector Error Correction Model (VECM) technique, and the Granger Causality test to investigate the relationship between long-term economic growth and unemployment in Nigeria from 1980 to 2013. The results demonstrated that unemployment has a detrimental and significant effect on GDP, and that there is a unidirectional relationship between unemployment and GDP with causality extending from economic growth to unemployment.

Many studies on the Nigeria's employment situation have been devoted to unemployment and its determinants and/or its impact on economic growth (Adebayo & Ogunrinola, 2006; Oladeji, 1994; Omotor and Gbosi 2006). Also, most studies on unemployment and economic growth in Nigeria have not been able to link it to Okun's law, that is to say to determine the existence of Okun's law in Nigeria as it relates to unemployment and economic growth. This study investigates the relationship between unemployment and economic growth using a more recent data. The study also investigates the relationship between unemployment and economic growth as it relates to Okun's law. In other words, it intends to determine if Okun's law holds true for Nigeria as it concerns unemployment and economic growth using a more recent data.

METHODOLOGY
Types and Sources of Data
In an attempt to empirically analyse the relationship between unemployment and economic growth in Nigeria in the light of Okun's law, data were obtained from secondary sources such as CBN Statistical Bulletin and Index Mundi from 1981 to 2020.

Method of Data Analysis
To measure the impact of unemployment on economic growth in Nigeria, this study applied the autoregressive distributed lagged model (ARDL). The justification for the application of ARDL is because some of the variables were integrated of order I(0) or I(1) (Pesaran & Shin, 1999; Pesaran, Shin, & Smith, 2001).

Model Specification

The basic form of an ARDL regression model is:

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + ... + \beta_k Y_{t-p} + \alpha_0 X_t + \alpha_1 X_{t-1} + \alpha_2 X_{t-2} + ... + \alpha_q X_{t-q} + \varepsilon_t ... \quad - \quad 1$$

where ε_t is a random "disturbance" term.

Which becomes;
$$\Delta y_t = \beta_0 + \Sigma\,\beta_i \Delta y_{t-i} + \Sigma\gamma_j \Delta x_{1t-j} + \Sigma\delta_k \Delta x_{2t-k} + \varphi z_{t-1} + e_t \quad ... \quad\quad - \quad - \quad 2$$

Then,
$$RGDP_t = \alpha_0 + \alpha_1 \Delta RGDP_{t-i} + \alpha_2 \Delta UNEM_{t-i} + \alpha_3 \Delta GEXP_{t-i} + \alpha_4 \Delta MOSU_{t-i} + \beta_1 RGDP_{t-i} + \beta_2 UNEM_{t-i} + \beta_3 GEXP_{t-i} + \beta_4 MOSU_{t-i} + \varphi z_{t-1} + U_t \quad\quad - \quad - \quad - \quad - \quad 3$$

Where:

$RGDP_t$ = Real Gross Domestic Product in Time t.

$UNEM_t$ = Unemployment Rate in Time t.

$GEXP_t$ = Government Expenditure in Time t.

$MOSU_t$ = Money Supply in Time t.

Δ = Difference Factor

t-i = Lag Period

t = 1981, 1982, 1983…2020

U_t = Error Term

Φ = Coefficient of the Error Correction Term

z_{t-1} = Error Correction Variable

α_0 = Constant Intercept

α_1 and β_1 = The Coefficients of Real Gross Domestic Product

α_2 and β_2 = The Coefficients of Unemployment Rate

α_3 and β_3 = The Coefficients of Government Expenditure

α_4 and β_4 = The Coefficients of Money Supply

apriori expectation

α_1 and $\beta_1 > 0$

α_2 and $\beta_2 < 0$

α_3 and $\beta_3 > 0$

α_4 and $\beta_4 > 0$

On apriori basis, it is expected that as Real Gross Domestic Product RGDP increases signifying increased growth, it should cause a reduction in Unemployment Rate. It is also expected that when there is increased growth, Government Expenditure should also increase. Again, it is expected that increased growth should also bring about increase in Money Supply.

RESULTS AND DISCUSSION OF FINDINGS

In the first stage, the descriptive analysis of the variables is done in order to comprehend the nature and the characteristics of the variables. This study applied the Zivot and Andrews (1992) method of unit root structural break, because it is a sequential test which utilizes the full sample and uses a different dummy variable for each possible break date. The choice of the unit root technique is also to take care of structural breaks especially structural breaks that happened during economic policies implementation or during economic crisis. The structural break change in time series can influence the results of tests for unit roots. Stationarity tests are required in order to select the estimation technique to be deployed in the estimation stage.

Table 1: Descriptive statistics

	RGDP	UNEM	MOSU	GEXP
Mean	34087.79	10.03450	7321.040	1809.865
Median	7648.622	8.420000	1073.889	982.8433
Maximum	154252.3	25.10000	36014.88	5469.077
Minimum	139.3105	1.800000	14.47117	9.636500
Std. Dev.	45875.59	6.822940	10834.10	1970.505
Skewness	1.265728	0.874262	1.385651	0.650783
Kurtosis	3.351861	2.797040	3.604644	1.780559
Jarque-Bera	10.88680	5.164216	13.40951	5.301854
Probability	0.004325	0.075614	0.001225	0.070586
Sum	1363512.	401.3800	292841.6	72394.60
Sum Sq. Dev.	8.21E+10	1815.548	4.58E+09	1.51E+08
Observations	40	40	40	40

Source: Authors' computation using Eviews 10

Table 1 shows the result of the descriptive statistics for the variables of interest in this study. It revealed the location of the centre of distributions of the series via the average values (mean), the minimum values, maximum values as well as how individual variable values are spread on each side of the centre via the standard deviation, thus revealing the uniformity of the items in the distribution of each variable. The peakedness of each variable is given by the kurtosis statistics, the symmetric nature of the series given by the skewness value while the normality condition of each of the series is given by the Jarque-Bera statistics. The table showed average values of 34087.79, 10.034, 7321.04, and 1809.865, for RGDP, UNEM, MOSU and GEXP respectively. The implication is that at this period, the average of 34087.79 of RGDP was achieved as a result of the effects of unemployment, money supply and government expenditure. The minimum and maximum values of RGDP were 139.31 and 154252.3 respectively. This shows that the growth in RGDP has been consistent. For UNEM, the table revealed minimum and maximum values of 1.8 and 25.1 respectively implying that the unemployment rate has consistently increased over time. Minimum and maximum values of MOSU reported in table 1 stood at

14.47and 36014.88 respectively indicating that despite the consistent increase in money supply, it has not really increased in volume compared to RGDP. The table reported minimum value of 9.64 for GEXP performance while the maximum value stood at 5469.07. From the table, it was observed that all the variables are skewed to the right, given the corresponding positive skewness statistics of 1.26, 0.87, 1.38, and 0.65 for RGDP, UNEM, MOSU and GEXP respectively. Their positive values of skewness show that the coefficients of the variables are positive and their means are more than median values. Also, the positive skewed distribution indicates that there is high risk than what the standard deviation measures. As regard Kurtosis, a kurtosis with distribution greater than 3 is a leptokurtic distribution. A leptokurtic distribution (greater than 3) has a sharper peak with lower probability than a normal distribution of kurtosis whose value is equal to 3. A kurtosis with less than 3 is a platykurtic distribution which has a lower and wider peak with higher probability than leptokurtic and normal distribution. Notably, the kurtosis statistics revealed that RGDP, UNEM, and MOSU are normal but GEXP is platykurtic, since it is less than 3.

Table 2: Correlation Analysis

	RGDP	UNEM	MOSU	GEXP
RGDP	1.000000			
UNEM	0.425223	1.000000		
MOSU	0.995860	0.381153	1.000000	
GEXP	0.956621	0.624137	0.937072	1.000000

Source: Author's computation using Eviews 10

Table 2 shows the correlation analysis of the relationship for RGDP, UNEM, MOSU and GEXP. The result revealed UNEM, MOSU and GEXP positively correlate to RGDP. Despite being positive to RGDP, UNEM has the least positive effect on RGDP, while MOSU and GEXP positively and highly correlate to RGDP.

Table 3: Unit Root Test

Series	Critical value (5%)	Break Date	ADF (Prob)	Order of integration
RGDP	-4.44	2017	-4.73 (0.0220)	I (0)
UNEM	-4.44	1997	-11.68 (0.00)	I (1)
MOSU	-4.44	2015	-5.15 (0.00)	I (1)
GEXP	-4.44	2004	-6.85 (0.00)	I (1)

Source: Authors' computation using Eviews 10

Table 3 shows the results of the Augmented Dickey-Fuller unit root test with structural break on the series which confirms that all the series are stationary at first difference for UNEM,

MOSU and GEXP. But for RGDP, it is stationary at level. The Justification for the application of ARDL is that there is a mixture of I(0) and I(1). ARDL is important to assess the long run and short-run relationship between the variables.

Table 4: The F – Bounds Cointegration

Test Statistics	Value	K	
F – Statistics	7.404	3	
		Critical Values Bounds	
Significance	I(0) Bound	I(1) Bound	
10%	2.72		3.77
5%	3.23		4.35
2.5%	3.69		4.89
1%	4.29		5.61

Source: Authors Computation Using Eviews 10

From Table 4, the F-statistics value is greater than the upper bounds critical value at 5% significance level which suggests there is a long run relationship among the variables as we reject the null hypothesis of no cointegration among the variables. Having established a long run relationship, the error correction table below shows the short run behaviour of the variables using the Error Correction Model as proposed by Engle and Granger. The results are shown on table 5.

Table 5: Results of Error Correction Model (ECM)

Variable	Coefficient	Std Error	t statistics	*p*value
CointEq (-1)*	-0.0819	0.0139	-5.856	0.0000

Source: Authors Computation Using Eviews 10

Table 5 summarizes the results of the ECM. The error correction term (ECT) describes the short-run dynamics or adjustments of the cointegrated variables towards their equilibrium values. It is obvious that the coefficient of ECM is negative and statistically significant at 5%. This result indicated that there is a short-run relationship between unemployment, economic growth, money supply and government expenditure. The error-correction term is negative and significant with an adjustment coefficient of -0.0819, indicating that changes in growth rate (Real GDP) adjust to its long-run equilibrium level with 5% of the adjustment taking place within the next period by 8.19%, which implies a slow adjustment speed.

Table 6: Short-run and Long-run ARDL Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
	Short-Run			
RGDP(-1)	-0.081947	0.117633	-0.696636	0.4945
UNEM	122.8657	70.01392	1.754875	0.0954

MOSU	-0.021088	0.359648	-0.058636	0.9539
GEXP	-2.060561	0.369530	-5.576168	0.0000**
C	-1160.986	545.5720	-2.128016	0.0466**
	Long-Run			
UNEM	3509.930	5369.057	0.653733	0.5211
MOSU	13.84126	15.84582	0.873496	0.3933
GEXP	-34.12861	60.76779	-0.561623	0.5809

Source: Authors Computation Using Eviews 10

In the short run, unemployment has a positive significant impact on economic growth in Nigeria. Previous year's RGDP negatively influenced economic growth in Nigeria. However, money supply and government expenditure depict a negative significant relationship on economic growth in Nigeria.

Similarly, in the long-run, unemployment depicted a positive insignificant effect on economic growth in Nigeria. Money supply equally showed a positive insignificant effect on economic growth in Nigeria. But government expenditure has a negative insignificant impact on economic growth in Nigeria.

Discussion of Findings
The results of this study did not meet the *apriori* expectation. This is because unemployment was found to be positive instead of negative, money supply negative in the short-run and positive in the long run but insignificant, while government expenditure was negative instead of positive. From the result, it is shown that both in the short-run and long-run, the relationship between unemployment and economic growth in Nigeria is positive and insignificant. This result does not support the Okun's law which stated that for every 1% increase in unemployment rate, a country's GDP will be roughly an additional 3% lower than its potential GDP. The result is inconsistent with the findings of Ogueze and Odim (2015), who found that there is a negative relationship between economic growth and unemployment rate in Nigeria.

Again the result is similar to the outcome of Banda (2016) who found that unemployment rate positively affected economic growth in South Africa. The implication in the differences in the outcome of these findings could be attributed to time difference when the researches were conducted in Nigeria and the methods of analyses. Again, application of the theory adopted for this study (Okun's theory) in the Nigeria economy is not feasible.

CONCLUSION AND RECOMMENDATIONS
This study examined the relationship between unemployment and economic growth in Nigeria as it relates to Okun's law with a more recent data coverage. The results indicated that both in the short-run and long-run, the relationship between unemployment and economic growth in Nigeria is positive and insignificant. This does not conform to Okun's law which stipulates a

negative relationship between Real GDP and unemployment. Again, the other variables included in the model money supply and government expenditure were not in conformity with the apriori expectation.

Therefore, based on the findings of this study, it is recommended that an alternative policy be formulated by the scholars and technocrats in Nigeria so as to tackle the problem of unemployment in the country. Such a policy should take care of the peculiarities of unemployment situation in Nigeria. Again from the result, there should be a well-balanced application of the monetary and fiscal policies which should checkmate each other. This is because the effect of government expenditure and money supply were found to contrast their influences on economic growth in Nigeria.

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