

## AN ECONOMETRICS INVESTIGATION INTO THE IMPACT OF UNEMPLOYMENT ON ECONOMIC GROWTH IN NIGERIA (1981-2015)

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### **Abstract:-**

*This study investigated the impact of unemployment on economic growth in Nigeria (1981- 2015) adopting the Ordinary Least Square technique (OLS), Augmented Dickey-Fuller test, Co-integration, Vector Error Correction Mechanism (VECM) and the Granger Causality tests. The regression results revealed that unemployment and inflation have negative and insignificant impact on economic growth, while government expenditure has a significant positive impact on economic growth in Nigeria. The computed R-squared implied that about 95% of the systematic variation in economic growth is explained by the unemployment, government expenditure and inflation and indicated that the model has a good fit. The result from the Johansen Co-Integration test revealed a long-run co-movement between the dependent variable, economic growth and the three independent variables, unemployment, government expenditure and inflation. The vector error correction coefficient for LNRGDP meets the a priori expectation of a negatively signed coefficient and this implied that 3.7976% of the errors are corrected in the long-run and as such there is a convergence. Granger Pairwise causality test result revealed that government expenditure granger causes real GDP at 5% level of significance, while none of the other variables granger caused the other. Hence, the study recommended that the activities of the government in promoting economic growth in the country should be geared towards promoting employment for the people, particularly in areas of agriculture, small and medium scale businesses and also, government expenditure in the economy should be increased as it brings about economic growth and would result in increased employment rate in the long-run.*

**Keywords:** - Unemployment, Economic growth, Government Expenditure, Inflation rate and Econometrics.

## 1 INTRODUCTION

### 1.1 Background to the Study

Unemployment is generally agreed to be a symptom of macroeconomic illness. The rate of unemployment has risen in the last decade in most of sub-Saharan African countries. In Nigeria, unemployment is regarded as one of the most challenging economic problem facing the federal government. The situation in Nigeria has been a case of rapid population growth with low level of employment rate (Kemi & Dayo, 2014). The problem of unemployment has been of great concern to economists and policy makers in Nigeria since early 1980s. The situation in Nigeria is disturbing, noting that various macroeconomic policies by government have been unable to achieve sustained growth (Aminu Manu & Salihu, 2013).

In the 1960s and 1970s, the Nigerian economy provided jobs for almost all job seekers and absorbed considerable imported labour. The wage rate compared favourably with international standards and there was relative industrial peace in most of the years. Following the oil boom of the 1970s, there was mass migration of people, especially the youth to the urban areas seeking for jobs. Following the downturn in the economy in the early 1980s, the problem of unemployment increased and has remained persistent for several decades, noting that economic performance has not been impressive (Aminu et al., 2013).

At the emergence of democracy in 1999, Nigerians had great expectations believing it will gravely address the problem of unemployment in Nigeria. However, the problem of unemployment persists unabated over the years even till date. Unemployment has been identified as one of the major causes of social vices, including armed robbery, destitution, prostitution, political thurgery, kidnapping and many more (Ezie, 2012).

The consequences of unemployment in Nigeria are very severe and threatening to the citizenry and the economy as a whole. The unemployment episode has continued to pose so many challenges to the survival of the Nigerian nation. While some of these consequences bother directly on the unemployed, others like epidemics are limitless in effects (Bello, 2003). It is an established economic reality that the size of the workforce directly impact on a country's GDP. Not only does the work force produce manufactured goods or services or agricultural produce in direct proportion, but also brings in its wake increasing purchasing power, which in turn, fuels economic growth. Thus unemployment contributes to a reduction in the potential which exists in spurring a country's GDP (Asoluka and Okezie, 2011).

This study therefore investigated the impact of unemployment on economic growth in Nigeria for the period 1981-2015. The rest of this paper is organised as follow: Section two (2) presents the review of relevant literature on the employment-economic growth relationship and theoretical framework of the study; Sections three (3) presents the data sources and research methodology respectively; section four (4) Reports the empirical evidences generated from data analysis while section five (5) summarizes and concludes the paper.

## 2 LITERATURE REVIEW

### 2.1 Conceptual review

#### 2.1.1 Unemployment in Nigeria: Trend and Issues

Analysis of employment data for the past years show that the rate of new entrants into the labour market has not been uniform with job creation; there has been an average of about 1.8 million new entrants into the active labour market per year (NBS, 2011).

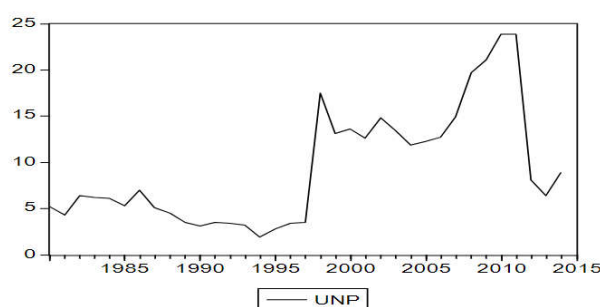
There are many types of unemployment in Nigeria; these include structural unemployment, cyclical unemployment, frictional unemployment and classical unemployment. These unemployment types have witnessed persistent rise over the years in Nigeria. Average unemployment rate in the past four decades (1970-2011) is about 9.67 per cent, 5.52 per cent during the period 1970-1989, and two-digit value at 13.46 per cent during the period 1990-2011 (NBS, 2012). Within a six year period of 2007 to 2011, Nigeria's unemployment rate increased to 23.9 per cent in 2011 (and also remaining at same level in 2012) compared with 21.1 per cent in 2010 and 19.7 per cent in 2009. The "Nigerian unemployment report, 2011" prepared by the NBS shows that the rate is higher in the rural areas (25.6 per cent) than in the urban areas (17.1 per cent). It reduced to 8.1 per cent in 2013. Unemployment rate jumped to 7.5 per cent in the first quarter of 2015 compared to 6.4 per cent in the fourth quarter of 2014 (NBS, 2015).

The problem of unemployment has been of great concern to economists and policy makers in Nigeria since early 1980s. The effect of financial crisis on public and private sectors has led to renewed attention on the phenomenon. The national unemployment rate masks significant disparities or differences among the states' unemployment rate. For instance, while the national unemployment rate was 19.7% in 2009, the unemployment rate for Bayelsa was 38.4%, Katsina 37.3%, Bauchi 37.1%, Akwa Ibom 34.1%, and Gombe 32.1% (NBS, 2015). The sectoral decomposition of unemployment is even more revealing.

Most of the states started with low rates of unemployment less than 10 per cent in first quarter of 1990. This rose with time to double digits becoming worse in the 2000s. All the states experienced two or more structural breaks in their unemployment trends. This may be indicative of the effect of the confusion in government policy; deregulation before 1994, regulation of the economy in 1994, and back to deregulation of the economy again in 1995.

Another interesting characteristic of the evolution of unemployment rate among the states is the poor performance of the northern states which shows higher unemployment rates particularly in the period 2000-2012, an era of democratization and civilian governance. An important characteristic of state labour force is that the Southern States have more educated labour force than the Northern states, and unemployment is more severe in the North than in the South. The lack of education of appropriate skills in the Northern States complicates the unemployment situation in the North. The mismatch between skills and job availability has led to the appearance of long- term unemployment for most of the Northern States. The adoption of structural adjustment programme since 1986, the retrenchment of civil servants in the public sector in the late 1980s and early 1990s, the distress in the financial system in the 1990s, the change from dictatorial military regimes in the 1999 to civilian democratic governance, the consolidation and recapitalization of banks in 2004/2005 as well as the implementation of the national economic emancipation and development strategy (NEEDS) in the 2003/2004 means that the labour market has not been able to absorb these shocks as expected by the creation of new jobs in the private sector and the improvement induced by more market friendly policies as indicated in NEEDS. This had led to high unemployment observed in Nigeria with persistence and long duration of unemployment spells. The unemployment trend can be depicted thus;

**Figure 1: Trend of Unemployment in Nigeria**



### 2.1.2 Nigerian Economic Growth: Trend and Issues

Nigeria is a middle income, mixed economy, an emerging market, with expanding financial, service, communications, and entertainment sectors; previously hindered by years of mismanagement, economic reforms of the past decade have put Nigeria back on track towards achieving its full economic potential (Kemi and Dayo, 2014).

Economic growth in post-independence Nigeria has not only been highly vulnerable, but has not been commensurate with the requirements of rapid poverty reduction and employment generation needed to absorb the rising number of unemployed. In the 1970s, the economy grew at an annual rate of 6.3% (CBN, 2000). In sharp contrast to the 1970s, economic growth collapsed to -0.3% per annum in the 1980s. There was a recovery to 4.2% annual growth in the 1990s. Broadly speaking, macroeconomic performance on the average was generally poor during the 1980s and 1990s. Unlike some other oil-exporting countries, Nigeria has been largely unsuccessful in achieving sustained economic growth and diversification and management of its economy since it became a major world oil exporter in the early 1970s. The consequence has been an unseen development pattern and trend characterized by overdependence on the oil sector, and the lack of significantly high growth rates for any extended period of time. The short-lived nature of the striking macroeconomic performance of the 1970s was derived principally from the combination of oil-induced microeconomic distortions, macroeconomic imbalances, policy and institutional failures, and the adverse effects of volatile oil market developments and external debt shocks in the post-1980s period resulting in a dramatic reversal in the momentum of impressive economic performance of the 1970s.

Economic recession, followed by economic stagnation, describes much of the post-1980 period. In the last few years, economic growth and other key macroeconomic variables have become more robust and impressive, but primary production, dominated by oil mining and traditional smallholding farming, has remained the linchpin of the economy since the early 1970s. The average living standard of Nigerians, as measured by the level of per capita real income, is quite low as real per capita income (GDP per capita) was only \$300 in the late 1990s. Since the 1980s, annual growth in real GDP barely kept pace with population growth. In consequence, living standards declined. However, for much of the 1990s, real per capita income growth was negative.

GDP annual growth rate in Nigeria averaged 5.91 per cent from early 2000s until 2015, reaching an all time high of 8.60 per cent in the fourth quarter of 2010 and a record low of 2.35 per cent in the second quarter of 2015. Real GDP growth slowed to 7.4% in 2011 from 8.0% in 2010, driven predominantly by crop production, wholesale and retail trade and telecommunications sectors. Government revenue, propelled by positive price development for crude oil in the international market surged from N6362.56 billion in 2010 to N9987.63 billion in 2011. Overall development in the external sector of the economy was favorable in 2011, compared with 2010. However, the relatively high poverty incidence and unemployment still persisted.

The Nigerian economy grew by 2.84 per cent year-on-year in the third quarter of 2015, following a 2.35 per cent expansion reported in the previous period. The oil sector, accounting for nearly 11 per cent of total production rebounded while services sector growth slowed. Quarter-on-quarter, GDP increased by 9.91 per cent, following a 2.57 per cent growth in the previous period.

**2.2 Empirical Literature Review**

A number of studies have empirically investigated the relationship between output and unemployment. Nwankwo and Ifejiolor (2014) investigated the causes of unemployment in Nigeria and how it has impeded the economic development. These and others form the researcher's reason for this study. They adopted descriptive research design. Convenience sampling technique was applied. Both primary and secondary data source was used. Pearson correlation test was used for the test of hypotheses. The results of the test hypotheses revealed that unemployment impedes the economic growth and development of Nigeria. The paper recommended that the federal government should hasten the power sector reforms and re-stabilize the power sector to end the looming energy crisis in Nigeria.

Sodipe and Ogunrinola (2011) examined the employment and economic growth relationships in the Nigerian economy. A simple model was formulated and estimated using the Ordinary Least Squares technique before and after the time series data used for the study were corrected for non-stationarity using Hodrick-Prescott filter. The result of their econometric analysis showed that a positive and statistically significant relationship exists between employment level and economic growth in Nigeria, while a negative relationship was observed between employment growth rate and the GDP growth rate in the economy. They concluded the study by advocating for increased labour-promoting investment strategies that will help to reduce the high current open unemployment in Nigeria.

Asoluka and Okezie (2011) assessed the relationship between unemployment and growth in Nigeria for the period 1985-2009. The study found that the economy grew by 55.5 per cent between 1991 and 2006; and the population increased by 36.4 per cent. All things been equal, this should have resulted to a decrease in the rate of unemployment but rather, unemployment increased by 74.8 per cent. The study also found out that the average contribution of the oil sector to the GDP between 1991 and 2006 is 30.5 per cent while agriculture that is the main source of gainful employment in the country contributed 36.7 per cent just a difference of 6.1 per cent from that of oil that employs less than 10 per cent of the labour force. The study recommends that the agricultural sector as a medium of reducing unemployment in Nigeria should be harnessed and advises that Government should continue in their quest towards reducing unemployment, as well as give their support in ensuring that the agricultural sector is not downtrodden but embraced in this task.

Onwioduokit (2006) examined the link between unemployment and several macroeconomic variables in Nigeria and concluded that ‘the shift in the composition of unemployment in Nigeria since 2000 is very instructive as it has brought to the fore the inadequacies of the received theory towards explaining the unemployment phenomenon in the country. Okafor (2005), also asserted the ruling class failed because they replaced the vision, policy and strategy, which should be the thrust of every leadership with transactions, as each successive government took turns to prey on the nation’s wealth by using public power, resources, good will, utilities as instrument of abuse, and personal gain. Thus, crippling the economy and engendering and exacerbating unemployment which creates abject poverty, hunger and frustration. Hallary (2012) elucidated this when he asserts that the crisis in Nigeria was a result of failure of governance to address socio-economic issues facing the nation.

Alanana (2003) opined that unemployment is potentially dangerous as it sends disturbing signal to all segments of the Nigerian Society. The rate of youth unemployment in Nigeria is high, even at the period of economic normalcy, i.e. the oil boom of the 1970s (6.2%); 1980s (9.8%) and the 1990s (11.5%).

**2.3 Theoretical Framework**

Keynesian Economists see unemployment as a situation in which the number of people able and are willing to work at prevailing wage rate exceeds the number of job available and at the same time, firms are unable to sell all the goods they would like to sell (Bannock & Davis 1998). The Keynesian theory of effective demand proposes the best framework for this study. In the Keynesian case, poor economic growth is a result of deficiency in aggregate demand.

According to Keynes consumption is a function of income, and the relationship is positive.

$C = f(Y)$ .....2.1

Where: C = Consumption and Y = Income or Output

An increase in income will result to an increase in consumption. Given that consumption is a component of aggregate demand;

$Y = C + I + G + (X - M)$ .....2.2

Where: I = Investment, G = Government Expenditure, X-M = Net Export

An increase in consumption leads to a multiple increase in aggregate demand and hence output. The growth of income hinges critically on the level of employment. Therefore, in an economy where unemployment is high, income and consumption will be low. This reduces the ability of the individuals in the economy to consume and decreases the aggregate demand of the economy leading to a fall in output. However, consumption is high in an economy of low unemployment, and the level of output will be high as producers seeks to take advantage of the high level of consumption in the economy.

### 3. Methodology

#### 3.1 Types and Sources of Data

The choice of data for this research is secondary data on real gross domestic product, unemployment, government expenditure and inflation from 1986-2014 sourced from the Central Bank of Nigeria Statistical Bulletin, Central bank of Nigeria Annual Reports and Statement of Account (various issues) as well as National Bureau of Statistics, 2015.

#### 3.2 Method of Estimation

This work adopted the ordinary least square technique (OLS) and involves decision on whether the parameters are statistically significant and theoretically meaningful. Based on the assumptions of classical linear regression model, the OLS technique possesses some optimum properties. This is the property known as the best linear unbiased estimator (BLUE property) and its computational procedure is fairly simple. The Augmented Dickey Fuller test was used to check for the presence of a unit root in the variables i.e whether the variables are stationary or not. After testing for the stationarity of the variables, the next step was to test for co-integration. This test was used to check if long-run relationship exists among the variables in the model and was carried out using the Johansen technique. The Vector Error Correction Mechanism (VECM) was used to test the speed of adjustment from short-run to long-run equilibrium. Finally, the granger causality was used to check for causality between the variables.

#### 3.3 Model Specification

The model incorporates unemployment, government expenditure and inflation rate as independent variables while economic growth, proxied by real GDP is the dependent variable. The model in this case, assumes a linear relationship between the rate of growth of real GDP, unemployment rate, government expenditure and inflation rate.

Our multiple regression equation is structured thus:

$$RGDP = f(UNP, GEXP, INFL) \dots\dots\dots 3.1$$

Where:

RGDP – Real Gross Domestic Product

UNP – Unemployment Rate

GEXP – Government Expenditure

INFL – Inflation Rate

The model is specified in its stochastic form as:

$$RGDP = b_0 + b_1UNP + b_2GEXP + b_3INFL + \mu \dots\dots\dots 3.2$$

$b_0$  = intercept  $b_1, b_2,$  and  $b_3$  = coefficients UNP, GEXP and INFL respectively, and  $\mu$  is the error term.

The natural log form of the model is:

$$LN RGDP = b_0 + b_1LNUNP + b_2LNGEXP + b_3LNINFL + \mu \dots\dots\dots 3.3$$

Apriori expectations:  $b_1$  and  $b_3 < 0$ , and  $b_2 > 0$

#### Justification of Chosen Variables

Real gross domestic product is a measure that reflects the value of goods and services produced in a given year. It is used to capture economic growth in this study because it is adjusted for inflation and as such provides a more accurate figure. Unemployment rate reflects the per centage of the people in the labour force who are unemployed. Unemployment leads lower aggregate demand and output of the economy. Therefore, it is expected that the higher the rate of unemployment, the lower would be the rate of growth of the economy.

Government expenditure is the total amount spent by the government in the economy over a period of time. An increase in the level of government expenditure is expected to bring about an increase in the level of output in the economy. Hence, government expenditure is expected to have a positive relationship with economic growth, i.e. the higher the level of government expenditure, the higher would be the level of economic growth.

Inflation rate reflects the rate of increase in the general price level in the country in a given year. The higher the price level in the country the lower would be the ability of the individuals to consume goods and services in the economy and the lower would be the aggregate demand and output of the economy.

### 4 Results and Discussion

#### 4.1. Ordinary Least Square Test

The OLS technique is used to examine the linear relationship between the dependent variables and the explanatory variables. The results obtained are presented in the table below (table 4.1):

**Table 4.1: Regression Results**

Dependent Variable: LNRGDP				
Variable	Coefficient	Standard Error	t-Statistic	Prob.
C	2.440433	0.617747	3.950540	0.0004
UNP	-0.018501	0.021773	-0.849703	0.4020
LNGEXP	0.998537	0.056436	17.69323	0.0000
INFL	-0.003152	0.005946	-0.530030	0.5999
R-squared	0.947692			
Adjusted R-squared	0.942630			
F-statistic	187.2140			
Prob(F-statistic)	0.000000			
Durbin-Watson statistic	1.655091			

Source: Author's Computation from E-views 4.1.

The results above show that UNP and INFL are insignificant and negatively related to the dependent variable, LNRGDP while LNGEXP is significant and positively related to LNRGDP, conforming to our apriori expectation, judging from their respective probability values and the signs of the parameter estimates. A per centage increase in unemployment will lead to a 1.85 per centage reduction in RGDP; a per centage increase in GEXP leads to a 99.8 per centage increase in RGDP; while a per centage increase in INFL leads to a 0.31 per centage reduction in RGDP. The computed R-squared implies that about 95% of the systematic variation in the dependent variable, LNRGDP is explained by the regressors and shows that the model has a good fit. The goodness of fit of the model was further proving by the adjusted  $R^2$  of 0.942630 indicating that the regressors explains over 94% of the systematic variation in the dependent variable, LNRGDP after accounting for the degree of freedom. Also, the overall model is statistically significant at 5% confidence level as shown by the F- statistics of 187.2140 with the probability value of 0.000000 which is less than 0.05. The DW value of 1.655091 indicates the absence of autocorrelation in the model since it approximates 2.

#### 4.2. The Unit Root Test

Accordingly, to avoid the problem of none sense correlation, the integrated properties of the variables is determined using the Augmented Dickey-Fuller (ADF) Unit Root test.

**Table 4.2: Test for Stationarity**

Variable	ADF Statistic Levels	Critical Value at 5%	ADF Statistic First Difference	Critical Value at 5%	Order of Integration
LNRGDP	-0.415795	-2.951125	-5.351799	-2.954021	1(1)
UNP	-1.931823	-2.951125	-5.832369	-2.954021	1(1)
LNGEXP	-1.072743	-2.954021	-8.790051	-2.954021	1(1)
INFL	-2.629663	-2.951125	-5.831303	-2.954021	1(1)

Source: Author's Computation from E-views 4.1.

The results of the augmented Dickey-Fuller test above show that all the variables, LNRGDP, UNP, LNGEXP and INFL were not stationary at levels but became stationary after the first difference. The null hypothesis of the presence of unit root in the series was rejected as indicated by the values of their calculated ADF statistic which were higher than their critical values (in absolute terms) at the 5% level.

#### 4.3 Johansen Co-integration Test:

The co-integration test is used to check for long run relationship between the dependent and independent variables. The co-integration test was carried out using the Johansen technique also using E-views software package and it produced the following results:

**Table 4.3.1: Test for Johansen Co-integration Using Trace Statistic**

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	5 Per cent Critical Value
None **	0.624945	58.85772	47.21
At most 1	0.401796	26.49523	29.68
At most 2	0.228263	9.539067	15.41
At most 3	0.029507	0.988378	3.76

Source: Author's Computation from E-views 4.1.

**Table 4.3.2: Test for Johansen Co-integration Using Max-Eigen Value**

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	5 Per cent Critical Value
None **	0.624945	32.36249	27.07
At most 1	0.401796	16.95616	20.97
At most 2	0.228263	8.550688	14.07
At most 3	0.029507	0.988378	3.76

Source: Author's Computation from E-views 4.1.

The Trace Test and the Max-Eigen statistics indicate one co-integrating equation at the 0.05 level. The result of Johansen Co-integration tests above strongly reject the null hypothesis of no co integration .i.e. no long-run relationship between the dependent and the independent variables in favour of at least 1, cointegrating vectors. This implies that there is long-run relationship between economic growth, unemployment, government expenditure and inflation.

#### 4.4. Vector Error Correction Mechanism

In order to determine the speed of adjustment towards the long-run equilibrium, the vector error correction mechanism is estimated that incorporate the speed of adjustment towards long-run equilibrium. The a priori expectation is that the vector error correction coefficient (alpha) must be negative. This is based on the general-to-specific rule and the results are presented in the table below:

**Table 4.4: Table Showing Vector Error Correction Estimates**

Error Correction:	D(LNRGDP)	D(UNP)	D(LNGEXP)	D(INFL)
CointEq1	-0.037976	-10.32726	-0.035162	-11.94754
	(0.09591)	(1.42756)	(0.34684)	(8.27427)

Source: Author's Computation from E-views 4.1.

The vector error correction coefficient for LNRGDP meets the apriori expectation of a negatively signed coefficient and this implies that 3.7976% of the errors are corrected in the long-run and as such there is a convergence. This indicates a low speed of adjustment, i.e. the speed at which the deviation from longrun equilibrium is adjusted slowly in which 3.7976% of the disequilibrium is removed each period.

#### 4.5 Forecast Error Variance Decomposition of RGDP

Here, the sensitivity of the variables is considered. In doing this, we employ a ten year forecasting (insample forecast) time horizon and observed the relevance of the variable over time horizon. However, only variance decomposition of real GDP (economic growth) is shown because of space.

**Table 4.5: Forecast Error Variance Decomposition of RGDP**

Period	S.E.	LNRGDP	UNP	LNGEXP	INFL
1	0.145680	100.0000	0.000000	0.000000	0.000000
2	0.225387	61.34896	0.350088	30.81187	7.489088
3	0.310187	41.34812	0.332268	45.68553	12.63408
4	0.380156	31.74411	0.250214	55.02504	12.98064
5	0.435306	27.51200	0.337037	60.04373	12.10723
6	0.478424	26.44597	0.566410	61.36150	11.62613
7	0.516252	26.50909	0.836870	61.09585	11.55819
8	0.551962	26.77027	1.030227	60.35792	11.84159
9	0.586175	26.83063	1.144496	59.72899	12.29588
10	0.618581	26.63806	1.207051	59.44955	12.70534

Source: Author's Computation from E-views 4.1.

The results show that the own shocks of the real GDP (economic growth) constitute a significant source of variation in growth forecast error in the time horizon, ranging from 100% to 26.64%. Ten years after, variations in growth are accounted for by GEXP (59.45%) and INFL (12.71%) shock, while that of UNP (1.21%) is relatively small in Nigeria. The salient feature of this is that the predominant sources of variation in growth are GEXP and INFL.

#### 4.6. Granger Causality Test

The result of Pairwise Granger's causality between the variables under study is provided below.

**Table 4.6: Granger Causality Test**

Pairwise Granger Causality Tests			
Date: 03/09/16 Time: 10:00			
Sample: 1981 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Probability
UNP does not Granger Cause LNRGDP	33	0.69308	0.50841
LNRGDP does not Granger Cause UNP		1.26731	0.29725
LNGEXP does not Granger Cause LNRGDP	33	10.5731	0.00038
LNRGDP does not Granger Cause LNGEXP		1.82317	0.18017
INFL does not Granger Cause LNRGDP	33	2.70583	0.08426
LNRGDP does not Granger Cause INFL		0.86415	0.43234

**Source: Author's Computation from E-views 4.1.**

Granger Pairwise causality test result shows that there is a one-way causation between GEXP and RGDP, noting that GEXP granger cause RGDP at 5% level of significance. Other than this causation, none of the other variables granger caused the other.

#### 4.7 Discussion of Results

From the results it was discovered that unemployment has an insignificant negative relationship with economic growth. This implies that unemployment hinders economic growth in Nigeria but its role is insignificant. Hence, economic growth will decline if unemployment persists unabated. This finding agrees with Nwankwo and Ifejiolor (2014) who revealed that unemployment impedes the economic growth and development of Nigeria. Government expenditure was found to have been highly significant and positively related to economic growth. It is an indication that government expenditure plays an important role in the growth process of the nation. The higher the expenditure of the government the higher will be the total output of the economy. Meanwhile, inflation rate, though not statistically significant, has a negative impact on economic growth in Nigeria.

The Johansen Co-Integration test indicated a long-run relationship between the dependent variable, economic growth and the three explanatory variables, unemployment, government expenditure and inflation. The vector error correction coefficient for LNRGDP meets the apriori expectation of a negatively signed coefficient and this implied that 3.7976% of the errors are corrected in the long-run and as such there is a convergence. Government expenditure constitute a significant source of variation in economic growth forecast errors over the 10 years horizon, while unemployment constitute the least source of variation in the growth forecast error. The Granger Pairwise causality test result implies that government expenditure granger cause real GDP, while none of the other variables granger caused the other.

### 5. Summary, conclusion and recommendations

#### 5.1 Summary

This study centers on the econometric investigation of the impact of unemployment on economic growth in Nigeria between 1981 and 2015. The study adopted the Ordinary Least Square technique (OLS), Augmented Dickey-Fuller test, Co-integration, Vector Error Correction Mechanism (VECM) and the Granger Causality tests. The regression results revealed that unemployment and inflation have negative and insignificant impact on economic growth, while government expenditure has a significant positive impact on economic growth in Nigeria. The computed R-squared implied that about 95% of the systematic variation in the dependent variable, LNRGDP is explained by the regressors and shows that the model has a good fit. Also, the overall model was statistically significant at 5% confidence level as shown by the F-statistics of 187.2140 with the probability value of 0.000000 which is less than 0.05. The result of stationarity test on the variables laid credence to the hypothesis of non-stationarity of the variables in level form, thereby making the variables stationary at 1(1), and at 5 per cent level of significance based on the Augmented Dickey-Fuller test. The result from the Johansen Co-Integration test revealed a long-run co-movement between the dependent variable, economic growth (RGDP) and the three independent variables, unemployment (UNP), government expenditure (GEXP) and inflation (INFL). The vector error correction coefficient for LNRGDP meets the apriori expectation of a negatively signed coefficient and this implied that 3.7976% of the errors are corrected in the long-run and as such there is a convergence. The Variance Decomposition of RGDP indicated that government expenditure constitute a significant source of variation in economic growth forecast errors over the 10 years horizon, while unemployment constitute the least source of variation in the growth forecast error. Granger Pairwise causality test result revealed that government expenditure granger causes real GDP at 5% level of significance, while none of the other variables granger caused the other.



## 5.2 Conclusion

Based on the findings of the study, it is ascertained that unemployment leads to poor economic performance of the country as it resulted in increase in social vices, human capacity under-utilization and increased poverty amongst the citizenry, social alienation and weak purchasing power among other negativity. It is also concluded that government expenditure plays a significant role in the growth process of the economy while inflation rates hinders economic growth in Nigeria.

## 5.3 Recommendations

This study hence recommends that:

- i. The activities of the government in promoting economic growth in the country should be geared towards promoting employment for the people, particularly in areas of agriculture, small and medium scale businesses, and also widening the coverage of entrepreneurial and vocational education.
- ii. The government expenditure in the economy should be increased as it brings about economic growth and would result in increased employment rate in the long-run.
- iii. Macroeconomic policies embarked on by the government should focus on maintaining price stability in the economy.

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