Fiscal Policy And Unemployment In Nigeria

Obayori, Joseph Bidemi
Department of Economics, Nnamdi Azikiwe University Awka, Nigeria
Email:profobj2000@gmail.com

ABSTRACT
The paper investigates fiscal policy and unemployment in Nigeria. The main objective of this study is to examine the impact of government capital and recurrent expenditure on unemployment rate in Nigeria. The study utilized aggregate annual data from 1980 to 2013. The data was analyzed with the co-integration and ECM methods. The findings are: the test for stationarity using Augmented Dickey Fuller (ADF) showed that all the variables were stationary at various levels. The Johansen-Juselius co-integration employed in testing for long run equilibrium relationship among the variables indicated that cointegrating relationship was found among the variables. The parsimonious ECM result reveals that the two independent variables (Government Capital and Recurrent Expenditure) have both negative and significant relationship with unemployment in Nigeria. The result also reveals a long run relationship between fiscal policy and unemployment, as depicted by both the sign and the statistical significant of the coefficient of the ECM. From the result so far, it is obvious that fiscal policy is effective in reducing unemployment rate in Nigeria. Based on these findings, the paper recommends amongst others that expansionary fiscal policy should be encouraged as it plays a vital role in the development process of an economy. Also, there should be appropriate policy mix improvement in quality of government expenditure. This will enable Nigeria government to increase her capital expenditure especially in the area of infrastructural development e.g power supply so that the citizenry can utilize such to boost the production and hence increase employment opportunities in Nigeria.

KEY WORDS: Policy, Government, Capital, Recurrent, Expenditure, Unemployment

1. INTRODUCTION

One of the major macroeconomic goals in any country of the world is to reduce unemployment to the beeriest minimum. Others include; sustained economic growth, a healthy balance of payment position and price stability. One of the major policies for achieving this is fiscal policy. Thus, fiscal policy involved the use of government collected taxes and expenditure to influence the level of economic activities in an economy. This policy is used to reduce variations in aggregate spending which are important causes of fluctuations in economic activity in the midst of intricate economic development problems such as unemployment and persistent fiscal deficit. Therefore, the primary goal of fiscal policy is to achieve a reduction in unemployment level. Thus, appropriate policy to address high rate of unemployment in any economy become necessary given that high rate of unemployment is an indicator of underdeveloped economy.

According to Ewubare and Obayori (2015), a striking feature of Nigeria's fiscal operations over the past three decades is the persistent and rising budget deficits. Meanwhile, Oloye (2012) opined that the development of budget deficit is often traced to the Keynesian inspired public expenditure led growth of the 1970s. Statistics has shown that the magnitude of nominal expenditure of the federal government, which recorded N839 million in 1970, leapt dramatically to about N5 billion in 1970 and thereafter rose further to over N 14.0 billion in 1980. Indeed, expenditure grew at a compound annual growth rate of about 7% during 1970—1980. This ever-rising fiscal deficit, particularly since 1986 has attracted the attention of

economists, policy makers, the World Bank and the International Monetary Fund (IMF).

Meanwhile, Obayori (2014) opined that the reduction in the rate of unemployment is the most difficult challenge facing any country in the developing world where on the average majority of the population is considered poor. Evidence in Nigeria shows that the number of those in poverty has continued to increase. For example the number of those in poverty increased from 27 percent in 1980 to 46 percent in 1985; it declined slightly to 42 percent in 1992, and increased very sharply to 67 percent in 1996 by 1999 it estimates had it that more than 70 percent of Nigerians lived in poverty (Gbosi, 2015). The increase in poverty level is accounted for by high rate of unemployment.

Over the years there has been an attempt to solve the case of unemployment in Nigeria. In 1986, the Babangida administration introduced the national directorate of employment (NDE) programme which aimed at creating job for the youths, thereby reducing the incidence of unemployment in the country. Others are; the rural electrification scheme, rural banking scheme, agricultural development programme, family support programme etc.

In spite of all the laudable efforts of government at addressing the problem of unemployment, unemployment still remains a major problem in Nigeria. Today Nigeria's unemployment rate is about 12.4 percent. This calls for the need to use the instruments of fiscal policy, particularly, government expenditure to address the problem of unemployment in Nigeria in order to drive the economy towards sustainable growth. The main objective of the paper is to examine the impact of fiscal policy on unemployment rate in Nigeria. In specific terms, the objective seeks to

assess the relationship between fiscal policy measure of both government capital and recurrent expenditure and unemployment rate in Nigeria. The paper is divided into five sections namely: introduction, theoretical and empirical framework, methodology, results and discussion as well conclusion and recommendations.

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

According to the Keynesian economist, fiscal policy is a key tool of economic management. The role of government is very crucial in maintaining the economy at the full employment. This is done by managing the level of aggregate demand until the economy is at full employment. Therefore, an increase in government expenditure increases aggregate demand. A minimal reduction in personal income tax increases disposable income thereby increasing aggregate demand. Nevertheless government expenditure is one of the components of aggregate demand. The equation as shows below:

$$Y=C+I+G+ (X-M) \qquad (1)$$

Where; Y = aggregate demand, C= consumption, I = investment, G= government expenditure, X=Export, M= Import and X-M = net export.

From the equation above, it follows that an expansionary and well-coordinated fiscal policy will help to create employment in the country. This is done by increase government expenditure in the country with an appropriate policy mix improvement in quality of government expenditure. To achieve full employment, government increases taxes on goods that are not locally produced as a means of increasing revenue. Conversely, government gives tax concession to local entrepreneur in order to encourage greater exports volume to pay for increased imports. Also, tax concession is a means of encouraging local production and employment creation and as well reducing the level of imports. Therefore, increased government expenditure stimulates greater export volume which will in turn translate to appreciation of a country's currency value. To this end, sustained fiscal deficits with consistent fiscal discipline will stabilize the economy both in the short and long run.

Furthermore, in the Keynesian theory, employment depends upon effective demand which results in increased output, output creates income and income provides employment. He regarded employment as a function of income. Effective demand is determined by aggregate supply and demand functions. The aggregate supply function depends on physical or technical conditions which do not change in the short run, thus it remains stable. Keynes (1934) concentrated on aggregate demand function to fight depression and unemployment. Thus, employment depends on aggregate demands which in turn are determined by consumption demand and investment demand.

According to Keynes, employment can be increased by increasing consumption and or investment. Consumption depends on income and when income rises, savings rises. Consumption can be increased by raising the propensity to consume in order to increase income and employment but the psychology of the people such as taste and habit which are also constant in the short run. Therefore, the propensity to consume is stable. Employment thus depends on investment. Thus, to increase employment level, there must be increase in investment.

2.2 Empirical Review of Literature

Empirical studies on the nexus between fiscal and the economy abound both in the developed and developing countries. But only those that are directly relevant to the current study are discussed below. For instance, Arewa and Nwakahma (2013) examined the relationship between government expenditures and a set of macroeconomic variables (GDP), consumer price index and unemployment) for the period of 1981 to 2011. The study adopts Johansson multivariate co-integration for its estimation procedure and found that there is long-run relationship between government expenditure and the specified macroeconomic variables. Also, the study found that an increase in capital expenditure improves economic bliss, while recurrent expenditure is detrimental to growth.

Austin and Ogbole (2014) examined public sector spending and macroeconomic variables in Nigeria for a period of 1970-2010. A test of causal relationships between government expenditure (GE) and other explanatory variables- GDP, unemployment (UER), inflation (IFR) Balance of payment (BOP) was examined using OLS and Johanson's co-integration/ Granger causality tests. The results of the analysis shows that public sector was more effective though marginally in stimulating economic growth (measured by GDP) in the period of regulation and more effective in reducing unemployment and enhancing BOP in the period of regulation. With respect to maintaining price stability, the public sector was significantly more effective in the period of deregulation. Granger causality test shows causal flow from government expenditure (GE) to BOP no causal flows to GDP, inflation rate (IFR) and unemployment (UER).

Elizabeth (2013) examined fiscal deficit and macroeconomic aggregates in Nigeria for the period 1980 to 2010. The study employed the Ordinary Least Square in estimating the equation and the co-integration test using the Engle Granger procedure. The empirical findings showed that fiscal deficits did not significantly affect macroeconomic output. The result also shows a bilateral causality relationship between government deficit and unemployment.

Owolabi (2011) examined the relative effectiveness of fiscal policy management in Nigeria, between 1970 and 2007. The study employed reduced forms model in addition to Beta coefficient, Theil's inequality and Root Means Square Error (RMSE) techniques to investigate the satiability and effectiveness of the estimated fiscal model which represent government spending, during and after estimation periods. The results revealed stability of the models and further confirmed the fact that government spending is the major determinant which influences and predict Nigeria macro-economic activity. There is what appears to be a manifestation of the so-called 'crowding out' effects of fiscal policy actions in Nigeria. These are associated with the negative sings assumed by coefficients of the lagged fiscal policy variables (except recurrent expenditures).

Holden and Sparrman (2013) examined the effect of government purchases on unemployment in 20 OECD countries for the period 1980 to 2007. The study observed that an increase in government purchases which equals one percent of GDP reduced unemployment by about 0.3 percentage point in the same year. This effect was observed to be greater in downturns than in booms, and also greater under a fixed exchange rate regime than a floating regime. Danjuma and Bala (2012) examined the role of governance in employment generation in Nigeria. The study employed primary data obtained through the use of interviews. The findings of the study showed that unemployment rate in Nigeria created tension and hatred between the people and leads to communal clashes that resulted in the emergence of militants groups (like the Boko Haram sect and Niger Delta militant), prostitution, armed robbery and child trafficking, constituting hiccups to security of lives and properties.

3.0 METHODOLOGY

This study adopts the Cointegration/ECM test as the main statistical tool. The time series data on government capital and recurrent expenditure from 1980-20123 used for the study was obtained from the Central Bank of Nigeria Statistical Bulletin. The model that shows the relationship among unemployment rate (UEP), Government Capital Expenditure (GCX) and Government Recurrent Expenditure (GRX) is specified thus:

$$UEP = f(GCX, GRX) \qquad (3.1)$$

$$UEP_t = \alpha_0 + \alpha_1 GCX_t + \alpha_2 GRX_t + U_t \qquad (3.2)$$

α_0 is the constant term, α_1, α_2, and α_3 are the slope parameters, "t" is the time trend, and "**U**" is the random error term. On the apriori, it is expected that; $\alpha_1 < 0$ and $\alpha_2 < 0$

3.1 Unit Root Test

This involves testing the order of integration of the individual series under consideration. The unit root test used in this paper is the Augmented Dickey-Fuller (ADF). Augmented Dickey-Fuller test relies on rejecting a null hypothesis of unit root (the series are non-stationary) in favor of the alternative hypotheses of stationarity. The tests are conducted with and without a deterministic trend (t) for each of the series. The general form of ADF is estimated by the following regression

$$\Delta^{yt} = \alpha^0 + \alpha^1 y^{t-1} + \Sigma^{\alpha\Delta y}_i + U^t \qquad (3.3)$$

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \Sigma\alpha_1\Delta y_i + \delta_t + U_t \qquad (3.4)$$

Where: y is a time series, t is a linear time trend, Δ is the first difference operator, α_0 is a constant, n is the optimum number of lags in the independent variables and U is random error term

3.2 Cointegration Test

The basic argument of Johansen's procedure is that the rank of matrix of variables can be used to determine whether or not the two variables are co-integrated. A lack of cointegration suggests that such variables have no long-run relationship. Cointegration is conducted based on the test proposed by Johansen (1998). Johansen's methodology takes its starting point in the vector auto regression (VAR) of order P given by

$$y_t = \mu + \Delta_1 y_{t-1} + - - - + \Delta P y_{t-p} + U_t \qquad (3.5)$$

Where:

Yt is an nx1 vector of variables that are integrated of order commonly denoted (1) and U_t is an

nx1 vector of innovations.

This VAR can be rewritten as

$$\Delta y_t = \mu + \eta_{yt-1} + \Sigma\tau_i \Delta y_{t-1} + U_t \qquad (3.6)$$

Where:

$$\Sigma A_{i-1} \text{ and } \tau_i = - \Sigma Aj \qquad (3.7)$$

To determine the number of co-integration vectors, Johansen (1988) suggested two statistic tests, the first one is the trace test (_ trace). It tests the null hypothesis that the number of distinct cointegrating vector is less than or equal to q against a general unrestricted alternatives q = r. The test calculated as follows:

$$\lambda trace (r) = ^{-T} \Sigma In^{(1-\lambda t)} \qquad (3.8)$$

Where:

T is the number of usable observations, and the λ1,s are the estimated eigenvalue from the matrix.

3.3 Error Correction Model

If cointegration is proven to exist, then the third step requires the construction of Error Correction Mechanism (ECM) to model dynamic relationship. The purpose of the ECM is to indicate the speed of adjustment from the short-run equilibrium to the long-run equilibrium state. The greater the co-efficient of the parameter, the higher the speed of adjustment of the model from the short-run to the long-run.

We represent equation (3.2) with an error correction form that allows for inclusion of long-run information thus, the ECM can be formulated as follows:

$$UEP_t = \alpha_0 + \Sigma\alpha_{1t} GCX_{t-1} + \Sigma\alpha_{2t} GRXt_{-1} + \delta_1 ECM_{t-1} + U_{1-t} \qquad (3.9)$$

4.0 RESULTS AND DISCUSSION

Table 4.1 Unit Root Test for Stationarity (ADF)

Variables	ADF Test	Critical Value			Order of integration
		1%critical value	5% Critical value	10% critical value	
UEP	-7.699375	-3.6661	-2.9627	-2.6200	Order One
GCX	-6.739270	-3.653730	-2.957110	-2.617434	Order One
GRX	-11.27110	-3.653730	-2.957110	-2.617434	Order Three

Source: Researchers' Computation

The unit root test reported in table 4.1 above shows that tow time series (UEP and GCX) attained stationarity at ordinary level. Meaning that they were integrated of order one. GRX attained stationarity at order three. This can be seen by comparing the observed values (in absolute terms) of the ADF test statistics with the critical values (also in absolute terms) of the test statistics at 1%, 5% and 10% level of significance. Therefore, the null hypotheses that all variables were not stationary were rejected.

Table 4.2: Johansen Test for co-integration Results

Eigen value	Trace Test	5% critical value	Prob. **	Hypothesis of CE(s)
0.934130	98.11142	29.79707	0.0000	None *
0.423227	16.50937	15.49471	0.0351	At most 1 *
6.29E-06	0.000189	3.841466	0.9908	At most 2

Source: *Researcher's Computation*

Having confirmed the stationarity of the variables vis-à-vis the ADF test, hence, the need to examine the presence or absence of cointegration among the variables. When a cointegration relationship is present, it means that the variables: UEP (unemployment rate), GCX (government capital expenditure) and GRX (government recurrent expenditure) share a common trend and long-run equilibrium as suggested theoretically. If otherwise, there is no long run relationship among the variables.

The Johansen cointegration analysis in table 4.2 above shows that there are two co- integrating equations at 5% level of significance. This is strong evidence from the unit root test conducted, where we observed that two time series were stationary at order one. Thus, the alternative hypothesis that there is a long run relationship between fiscal policy and unemployment is accepted. Given the existence of co-integrating equations, the requirement for fitting in an error correction model is satisfied.

Table 4.3: Parsimonious Error Correction Mechanism

Variables	Coefficient	t-Statistics	Prob
C	0.226185	3.767335	0.0011
DLOG(UEP (-1))	0.044129	0.209920	0.8358
DLOG(UEP (-2))	0.051980	0.360000	0.7224
DLOG(GCX (-1)	-0.277805	-2.471039	0.0221
DLOG(GRX (-1))	-0.243627	-2.244227	0.0357
ECM(-1)	-1.166997	-4.161100	0.0004
R^2	0.731370	Durbin-Watson stat	1.669058
Adjusted R-squared	0.616242		
F-statistic	6.352703	Prob(F-statistic)	0.000239

Source: Researchers' Computation

Error correction model (ECM) is a means of integrating the short-run behaviour of an economic variable with its long-run behaviour (Gujarati and Sangeetha, 2008). The table above shows an inference of the parsimonious error correction test conducted. The over-parameterized ECM has been transform to achieve the parsimonious ECM, which would be more interpretable for policy implementation. The result of the estimated parsimonious error correction model in table 4.3 above shows that the coefficient of determination is 0.731. Thus, 73 percent systematic variation in unemployment rate is explained by total government capital and recurrent expenditures. Also, the overall model is significant at 5 percent level of significance as shown by the F-statistic of 6.35. Meaning that there is a significant relationship between fiscal policy and unemployment rate in Nigeria during the period of study. The coefficient of ECM is rightly signed (that is negative) and statistically significant at 5 percent significance level. Meaning that the short run dynamic has been adjusted to long run equilibrium. The Durbin Watson value of 1.7 which is not too far from 2.0, suggests a lesser level of autocorrelation. Meanwhile, for the lag one periods, the two explanatory variables were negatively signed and statistically significance at 5 percent level. This implies that a well-coordinated fiscal policy vis-à-vis increase in government capital and recurrent expenditure will help to reduce the rate of unemployment and as well impact on unemployment in Nigeria over the period of study. Thus, government fiscal activity vis-à-vis her expenditure in a necessary tool for solving unemployment.

5.0 CONCLUSION

The study focuses on the impact of fiscal policy on unemployment rate in Nigeria. Unemployment is a development indicator of an economy. Thus, the need to adopt a well-articulated policy is require stemming the problem of unemployment. The study adopts co-integration and error correction model on a time series data from 1980 to 2013. The study regressed fiscal policy proxied by total government capital and recurrent expenditure on unemployment rate. The long run result reveals that about 73% of the systematic variation in the unemployment rate is explained by total government capital and recurrent expenditure. Also, the two independent variables impact on unemployment rate. This is because the t-statistics are statistical significance at 5% level. The result also reveals that there is long run relationship between fiscal policy and unemployment rate, as evidenced by the ECM.

From the discussion so far, it is obvious that fiscal policy tool of government expenditure is effective in achieving a reduction in unemployment rate in Nigeria. Based on these findings, the study recommends that; expansionary fiscal policy should be encouraged as it plays vital role in the development process of an economy. Also, there should be appropriate policy mix improvement in quality of government expenditure. This will enable Nigeria government to increase her capital expenditure especially in the area of infrastructural development e.g power supply so that the citizenry can utilize such to boost the production and hence increase employment opportunities in Nigeria.

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