

ANALYSING THE IMPACT OF FISCAL POLICY ON UNEMPLOYMENT IN NIGERIA

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Abstract: *Fiscal policy has been a tool for economic stabilisation in developing economies for decades. Ever since the Great Depression, fiscal policy has been in the frontline of policy actions. This study investigates the impact of fiscal policy tools on unemployment rate in Nigeria between 1991 and 2021 using the autoregressive distributed lag model. The study has found the presence of cointegration among the variables. Additionally, taxation was found in the long-run to have no impact on unemployment rate while government spending in the long-run worsens unemployment largely due to unproductive and wasteful spending. In the short run, both taxation and government spending worsen the unemployment situation in Nigeria. It, therefore, indicates that the tax system in Nigeria may not be very effective over time. It is thus recommended that the government should consider cutting down expenses and accomplish an expenditure switch from more recurrent spending to more capital and infrastructural spending which will encourage job creation. Furthermore, the government should consider selective taxation on those lucrative sectors with less job-creation capacity in order to give to those sectors with more job creation potential. Additionally, taxation should be logically applied to imported goods to discourage consumption whilst encouraging local production and incentivising local producers through fiscal policy.*

Keywords: fiscal policy, unemployment, taxation, government spending, Nigeria.

JEL classification: H2, H5, J6.

1. Introduction

1.1 Background and Problem Statement

The macroeconomic aim of every country is the achievement of a three-pronged goal - reduction of unemployment, maintenance of general price stability and maintenance of a steady rate of growth (Saad and Ahmad, 2019). The fiscal policy is a way to achieve these goals. It could either be expansionary, when aimed at increasing the available liquidity and individual purchasing power, or contractionary, when it is aimed at reducing the level of credit available in the economy (Unal, 2015).

Abdon et al. (2014) has stressed that in the short-run, counter-cyclical fiscal expansion could improve aggregate output and economic growth during cyclical economic slumps. Meanwhile, fiscal contraction has a cooling-down effect on an economy with an unsustainable growth pace and as such, is exposed to overheating. More so, this implies that the use of fiscal policy has consequences for the rate of unemployment in the medium and long-run.

As an economic stabilisation tool, fiscal policy has spawned a number of economic discussions on issues bordering around its application, applicability and relevance to

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particular macroeconomic situations (Omran and Bilan, 2020). A major debate exists as to the manner in which the fiscal policy mechanism affects the labour market and the economy at large. On one end, the New-Classical Real Business Cycle proponents posit that increase in government spending and tax cut encourages investment and discourages private consumption (Baxster and King, 1993). While on the other end, the IS-LM theorists argue that a positive shock to state spending supports consumption and wages (Omran and Bilan, 2020). These variations in investment, real wages and private consumption have been identified as some of the key determinants of economic growth and unemployment rates (Abubakar, 2016; Obayori, 2016; Selase, 2019).

The employment of taxation to influence the rate of unemployment has been a strategy adopted by even the most developed countries of the world. For instance, to reduce the United States of America (USA) unemployment rate during the 2008-2009 financial crisis that resulted in a rise in global unemployment rate, the USA government passed an \$830 million expansionary policy in early 2009 involving cuts in taxes and increased government spending, which resulted in the subsequent decline of the unemployment rate. Likewise, the United Kingdom (UK), during the same period, cut the Value Added Tax (VAT) and increased government spending in a bid to curtail the rising rates of unemployment in the country (Peter et al., 2021).

Observing the modern-day Nigeria and its fiscal space, it is discernible that there have been various tax reforms, including the recent reform in 2020. It is clear that the Federal Government of Nigeria (FGN) has increased its efforts towards improving revenues generated from tax sources. For instance, VAT was increased from 5% to 7.5% in February 2020 Federal Inland Revenue Services (FIRS, 2020). In addition, in November 2020 a progressive Company Income Tax (CIT) was introduced.

Also noteworthy is that the Nigerian government has made significant efforts at improving employment in Nigeria. This is evident from the creation of the National Directorate for Employment (NDE) in 1986, which was aimed at reducing unemployment in the country by creating jobs for youths. Other efforts include the Agricultural Development Programme, PAP, SURE, YOUWIN, NAPEP among others (Obayori, 2016). More recently, the FGN launched the N-power scheme which to date has provided over 500,000 Nigerian youths with two years of employment with support for self-employment afterwards (Ikechukwu et al., 2021). Despite these efforts, the unemployment rate in Nigeria continues to increase. As of 2018, the combined unemployment rate for Nigeria was at 30%. With the worsening situation caused by the COVID-19 crisis, more people were expected to become unemployed by the end of 2022 with the projected unemployment rate at about 32% (Federal Ministry of Youth and Sports Development, 2021).

Rising unemployment has impacted the socioeconomic space in Nigeria. It impedes economic progress in many ways ranging from economic waste of productive resources to political and social unrest perpetrated by restive youths (Obayori, 2016). The unemployment situation in Nigeria, according to Obumneke (2012) is a call for concern as the economy is unable to absorb the teeming/overflowing labour force. This has continually contributed to the upsurge in crimes, violence, vandalism and other social vices witnessed in every part of the country today. This is in spite of the ever-rising government expenditure which accounted for 11.9% of GDP in 2018, 12% of GDP in 2019, 11.9% of GDP in 2020 and recently, 13% of GDP in 2021 (World Bank, 2022). Despite this continuous increase, however, little improvement has been made in terms of infrastructural development like quality of transportation, communications, and power, and this has reduced the attractiveness of the economy to investment both from within and outside the country (Ebuh et al., 2019). Due to the decadent state of infrastructure in the country, foreign direct investment (FDI) inflow to Nigeria has declined over time. Net FDI inflow as a percentage of GDP was 1.09%, 1.64%, 1.66% and 0.55% for the years 1990, 2000, 2010 and 2020 respectively (World Bank, 2022).

This implies that, despite high rates of expenditure along with new tax measures being levied, the efforts have yet to yield considerable returns as regards the reduction of unemployment rates. This could be due to the component of public spending, in which about 86% of the total spending goes to recurrent spending such as overhead costs, administrative cost and debt servicing, leaving only a meagre part for infrastructural development, as according to the Central Bank of Nigeria (CBN, 2022). Consequentially, this leads to capital flight as many producers move their factories elsewhere due to high cost of production and this inevitably creates job losses for the teeming labour force (Ibrahim, 2016). More so, the high import rate has led to the debilitating state of the industrial sector, which suffers from low-capacity utilisation as increase in aggregate demand through the ever-rising consumption does not translate into increase in local production. Hence, a thorough re-examination of the effects of fiscal policy on unemployment in Nigeria becomes necessary.

Previous studies have used a mix of fiscal policy instruments across different time periods and different results have surfaced. For instance, Ikechukwu et al. (2021) have found insignificant relationship between fiscal policy and unemployment in Nigeria while Onwuka (2021) has found that expansionary or contractionary fiscal policy may reduce unemployment rate depending on the instruments applied. This study is however different from others in that it considers the transmission mechanism involved in the effect of fiscal policy tools on unemployment rate in Nigeria.

1.2 Objective of the Study

The main objective of this study is to analyse the impact of fiscal policy on unemployment in Nigeria, the specific objectives are:

- i. To analyse the impact of government spending on unemployment in Nigeria.
- ii. To analyse the impact of taxation on unemployment in Nigeria.

1.3 Hypothesis

H₀₁: Government expenditure has no significant impact on unemployment in Nigeria.

H₀₂: Taxation has no significant impact on unemployment in Nigeria.

1.4 Structure of the Paper

This paper is structured into five sections as follows: Introduction, which presents the background, objectives and hypothesis; the Literature Review part considers the theoretical underpinning of the study along with the review of relevant related studies; the Methodology part exposes the empirical strategy employed for analysis, describes the model and data used; Results, which presents and discusses the findings; and, Conclusion, which concludes the study with policy recommendations.

2. Literature Review

2.1 Theoretical Framework

The Keynesian theory argues for government intervention for sustainable economic growth through fiscal policy measures. Keynes (1936) has posited that the decline in demand for labour mostly results from low levels of consumption. According to Keynes (1936), government intervention through infrastructural spending reduces cost of production and increases investment attractiveness, which will lead to increase in domestic investment and foreign direct investment, and therefore, more demand for labour. Contrarily, a generous tax regime will encourage more production and employment of labour to increase production. An illustration is given below:

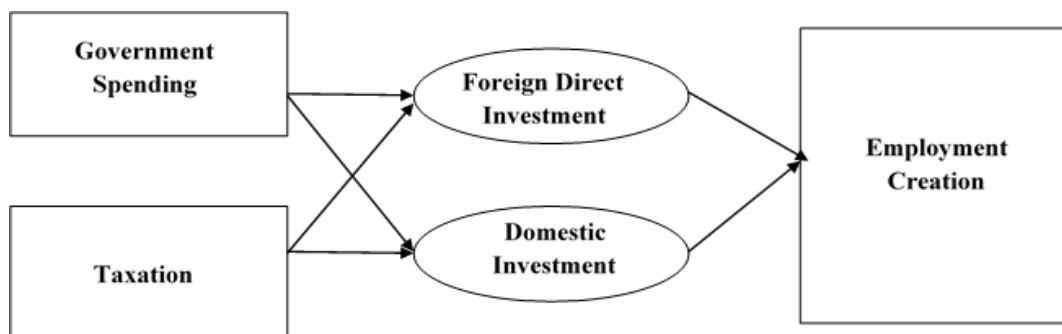


Figure 1: Linkage between Fiscal Policy and Unemployment
Source: Author's own Conceptualisation

Figure 1 depicts the process through which the government's fiscal policy influences employment generation. It can be deduced from the pathway that taxation and public spending pass through investment to create jobs in an economy. Taxes and expenditure applied as expansionary or contractionary fiscal measures could either increase or decrease unemployment. Therefore, job creation through fiscal policy depends on the level of physical investment in the country. The transmission channels are a key aspect of the analysis.

2.2 Empirical Literature

Akeerebari (2022) has applied the Vector Error Correction Model (VECM) to Nigerian data from 1985 to 2020 and has found that government spending and tax have insignificant impact on unemployment. Similarly, Enyoghasim et al. (2022) have studied the Nigerian economy using an Autoregressive Distributed Lag (ARDL) technique and have found that capital expenditure reduces unemployment whereas recurrent expenditure increases unemployment during the 1981 to 2011 period. Similarly, Peter et al. (2021) have analysed data covering the 1994 to 2020 period using the same method for Nigeria and have observed that value added tax increases unemployment rate while corporate tax and customs duties reduce unemployment.

In their study, Ikechukwu et al. (2021) have applied the ARDL technique to Nigerian data covering the 1990 to 2020 time period and have found that taxation, public spending and debt were insignificant determinants of unemployment. Again, by employing a different approach, Onwuka (2021) has made use of Nigerian data covering 1981 to 2020 by using the Vector Autoregressive (VAR) technique and has found that public spending and tax decreases unemployment rate.

Omran and Bilan (2020) have examined the effect of Egyptian fiscal policy on unemployment rate between 1976 and 2018 by using the Structural VAR and impulse response function. The results have revealed that unemployment responds to a shock in taxation negatively in the short-run while it becomes a positive response in the long-run. Meanwhile, unemployment rate responds negatively to expenditure shock throughout the period. Udeze et al. (2020) have investigated the impact of government spending, government revenue, fiscal deficit and public debt on urban unemployment rate in Nigeria. Using time series data spanning from 1981 to 2018, they have applied the Generalised Linear Model (GLM) for analysis. Their results have shown that capital expenditure and revenue have significant negative impact on urban unemployment in Nigeria. Moreover, recurrent expenditure and fiscal deficit insignificantly affect urban unemployment.

Examining annual Jordanian data from 1990 to 2019, Saraireh (2020) has employed the ARDL technique, and the results show that government spending reduces unemployment in the long-run, while in the short-run, it increases unemployment. Onuoha and Agbede (2019) have examined the same relationship for 20 African countries between 2000 and 2017 by

using the two-step system General Method of Moments (GMM). The results have showed that defense and health spending increase unemployment whereas education expenditure decreases unemployment. Meanwhile, Alphonsus (2019) has used Nigerian data from 1981 to 2017 to implement the OLS technique in their study. They found that company income tax, personal income tax and customs and excise duty have inverse relationship with unemployment in Nigeria, while value added tax showed positive relationship.

3. Methodology and Data

3.1 Model Specification

Following the Keynesian postulates of the tendency of fiscal policy to affect the rates of unemployment, the model for this study was adopted from Ikechukwu et al. (2021). However, it was further refined to account for the channels through which fiscal policy are perceived to influence unemployment. The linear specification of the model is thus presented as follows:

$$UNE_t = \alpha_0 + \alpha_1 \text{LogTAX}_t + \alpha_2 \text{LogGEX}_t + \alpha_3 \text{LogDIN}_t + \alpha_4 \text{LogFDI}_t + \alpha_5 \text{LogCON}_t + \mu_t \quad (1)$$

Where: *UNE* is unemployment rate; *Tax* is government tax revenue; *GEX* is government spending; *DIN* is domestic investment; *FDI* is foreign direct investment; and *CON* is private consumption expenditure. The data obtained for all variables are of secondary sources and cover the period between 1991 and 2021. Specifically, data for unemployment rate and foreign direct investment were taken from the World Bank (2022) World Development Index while data for government expenditure, tax revenue, domestic investment and domestic consumption has been obtained from the Central Bank of Nigeria (CBN, 2022) Annual Statistical Bulletin.

The model specified in equation (1) is a log-linear model because of the difference in measurement. While unemployment rate is measured in percentages, the other variables are measured in billions of Naira. The basis of this to avoid the problem of multicollinearity and to make the estimates easy to interpret.

3.2 Analysis Technique

The ARDL technique by Pesaran et al. (2001) was used for the analysis. It is preferred to other conventional cointegration methods by Engle and Granger (1987), and Johansen and Juselius (1990) because of its ability to handle data regardless of the order of integration as long as it is below second differencing; ability to perform well with small sample size; and its combination of long-run and short-run relationship in one reduced form model (Ibrahim & David, 2022; Ibrahim et al., 2021; Omoke et al., 2022).

To determine the presence of a long-run relationship after having conducted the test for stationarity, equation (1) was transformed into the following ARDL model:

$$UNE_t = \alpha_0 + \alpha_1 \sum_{i=0}^n \Delta UNE_{t-i} + \alpha_2 \sum_{i=0}^n \Delta \text{LogTAX}_{t-i} + \alpha_3 \sum_{i=0}^n \Delta \text{LogGEX}_{t-i} + \alpha_4 \sum_{i=0}^n \Delta \text{LogDIN}_{t-i} + \alpha_5 \sum_{i=0}^n \Delta \text{LogFDI}_{t-i} + \alpha_6 \sum_{i=0}^n \Delta \text{LogCON}_{t-i} + \delta_1 \text{LogTAX}_{t-1} + \delta_2 \text{LogGEX}_{t-1} + \delta_3 \text{LogDIN}_{t-1} + \delta_4 \text{LogFDI}_{t-1} + \delta_5 \text{LogCON}_{t-1} + \mu_t \quad (2)$$

Where α denotes the coefficients of short-run while δ denotes the long-run coefficients. The F-statistic derived from estimating equation (2) is compared with the critical values by Pesaran et al. (2001) to determine the presence of cointegration. Where the F-statistic is greater than the upper bound value at 5%, there is cointegration while if it falls below the

lower bound, there is no cointegration. After establishing the presence of cointegration, the long-run and short-run estimates were determined using the following equations:

$$UNE_t = a_0 + \delta_1 LogTAX_{t-1} + \delta_2 LogGEX_{t-1} + \delta_3 LogDIN_{t-1} + \delta_4 LogFDI_{t-1} + \delta_5 LogCON_{t-1} + \mu_t \quad (3)$$

$$\Delta UNE_t = a_0 + \alpha_1 \sum_{i=0}^n \Delta UNE_{t-i} + \alpha_2 \sum_{i=0}^n \Delta LogTAX_{t-i} + \alpha_3 \sum_{i=0}^n \Delta LogGEX_{t-i} + \alpha_4 \sum_{i=0}^n \Delta LogDIN_{t-i} + \alpha_5 \sum_{i=0}^n \Delta LogFDI_{t-i} + \alpha_6 \sum_{i=0}^n \Delta LogCON_{t-i} + \gamma \varepsilon_{t-1} + \mu_t \quad (4)$$

Where equation (3) represents the long-run model, equation (4) represents the short-run model with the error correction component $\gamma \varepsilon_{t-1}$ which shows the speed of adjustment towards long-run equilibrium in the case of any short-term disturbance to the system.

4. Results and Discussion

4.1 Preliminary Analysis

In Table 1, unemployment displays a mean value of 4.87% with a standard deviation of 1.94%. Accordingly, tax revenue, government expenditure, foreign direct investment, domestic investment and private consumption have mean values of ₦1,646.18 billion, ₦3,291.72 billion, ₦3232.39 billion, ₦10,479.25 billion and ₦34,140 billion respectively with foreign direct investment having a higher deviation from the mean. The skewness statistics show that tax revenue and private consumption are negatively skewed while the other variables are positively skewed. The Jarque-Bera statistics show that unemployment, government expenditure, and domestic investment follow a normal distribution pattern.

Table 1. Descriptive Statistics

	UNE	TAX	GEX	FDI	DIN	CON
Mean	4.87	1646.18	3291.72	3232.39	10479.25	34140.10
Std. Dev.	1.94	1718.65	3297.45	2638.49	13245.30	37593.49
Skewness	1.68	0.99	1.09	0.75	2.17	0.84
Kurtosis	4.10	3.12	3.39	2.32	7.46	2.20
Jarque-Bera	16.19	5.08	6.40	3.47	49.93	4.48
Probability	0.00	0.08	0.04	0.18	0.00	0.11

Source: Author's own computation from E-views 10

From Table 2, the stationarity test results show that following the decision rule of non-stationarity where the test statistic is less than the critical value at 5 percent, consumption is stationary at levels while all other variables are stationary at first difference. The level of integration of the variables are in line with the requirements of the ARDL bounds testing procedure for cointegration.

Table 2. Stationarity Test

Variables	Levels		First Difference		Order of Integration
	Test Statistic	Critical Value	Test Statistic	Critical Value	
UNE	1.25	-2.96	-4.34	-2.97	I(1)
TAX	-2.79	-2.97	-6.92	-2.97	I(1)
GEX	-2.86	-2.99	-7.94	-2.97	I(1)
FDI	-1.73	-2.96	-6.53	-2.97	I(1)
DIN	-1.50	-2.96	-3.61	-2.97	I(1)
CON	-4.26	-2.96	-4.04	-2.97	I(0)

Source: Author's computation from E-views 10

The bounds test result presented in Table 3 shows the ARDL bounds test result. The f-statistic derived from the procedure is 3.82, which is greater than the upper bound critical value of 3.38 at 5%.

Table 3. ARDL Bounds Test

F-statistic	K=4	Level of Significance	
		I(0)	I(1)
3.82	10%	2.08	3.00
	5%	2.39	3.38
	2.5%	2.7	3.73
	1%	3.06	4.15

Source: Author's own computation from E-views 10

Hence, following the decision rule earlier stated, it can be concluded that there is cointegration between unemployment rate and the fiscal policy variables included in the model, as well as the control variables. This sets the ground for the long-run and error-correction estimation.

4.2 Empirical Results and Discussion

Having established the presence of cointegration among the variables, the results of the long-run and short-run estimates are presented in Table 4. Tax revenue in the long-run carries a negatively signed coefficient of -7.52, thus suggesting a negative impact of taxation on unemployment in the long-run. However, it is uncertain what the impact really would be since the relationship is an insignificant one judging from the probability value of 0.46 corresponding to a t-statistic of -0.81. Hence, in the long-run, tax revenue has no significant impact on unemployment rate in Nigeria. This finding supports the findings of Abouelfarag and Qutb (2020) and Nepram (2021). On the other hand, government expenditure (GEX) shows a coefficient of 3.49 with a probability value of 0.04 thus implying that a unit increase in government spending leads to 3.49 percent increase in the long-run unemployment rate.

Table 4. Regression Estimates

Variable	Coefficient	T-statistic	Prob.
C	-55.91	-0.95	0.39
TAX	-7.52	-0.81	0.46
GEX	3.49	2.54	0.04
FDI	-1.18	-3.23	0.03
DIN	-28.86	-2.34	0.05
CON	33.46	0.76	0.49
D(UNE(-1))	1.16	5.29	0.01
D(UNE(-2))	1.01	4.42	0.01
D(TAX)	3.22	4.82	0.01
D(TAX(-1))	1.53	2.95	0.04
D(TAX(-2))	2.35	4.59	0.01
D(GEX)	-0.31	-0.47	0.67
D(GEX(-1))	7.41	6.41	0.00
D(GEX(-2))	1.74	2.30	0.08
D(FDI)	0.52	2.36	0.08
D(FDI(-1))	-3.42	-6.85	0.00
D(FDI(-2))	-3.47	-6.04	0.00
D(DIN)	-3.35	-4.07	0.02
D(DIN(-1))	4.71	5.28	0.01
D(DIN(-2))	3.56	4.98	0.01
D(CON)	-0.36	-0.42	0.69
D(CON(-1))	3.90	4.54	0.01
D(CON(-2))	3.86	5.15	0.01
ECT	-0.39	-7.26	0.00
R-squared	= 0.88		
D-W Stat.	= 1.98		
Prob. Serial Correlation	= 0.09		
Prob. Heteroskedasticity	= 0.50		
Prob. Jarque-Bera	= 0.54		
Prob. Ramsey RESET	= 0.51		

Source: Author's own computation from E-views 10

Foreign direct investment (FDI) and domestic investment (DIN) show long-run coefficients of -1.18 and -28.86 respectively with probability values of 0.03 and 0.05 respectively. This implies that both FDI and private domestic investment have negative impact on unemployment in the long-run. This is in line with the expected relationship where both domestic and foreign investment expand the employment capacity of the economy through expansion of output. Private consumption expenditure on the other hand, has a coefficient of 33.46 with a non-significant probability value of 0.49 which implies that domestic private consumption has no actual impact on unemployment rate in the long-run. This could be true because Nigeria is a net-importer of consumer goods and hence, increase in consumption does not drive an increase in domestic output or unemployment.

In the short-run, unemployment rate in the short-run increases current unemployment. This could happen through the low income of unemployed persons thus reducing active demand and thus, reduction in demand for labour. Furthermore, current tax and lagged taxation in the short-run increase the level of unemployment. This could be because of the unproductive usage of tax revenues, which reduces incomes to firms and individuals and thus, reduces demand for labour. This result aligns with the finding of Godslove and Wobilor (2016) as well as Unal (2015), while it contradicts the findings of Ozoh et al. (2016) and Zirgulis and

Sarapova (2017). Likewise, lagged expenditure in the short-run has a positive impact on unemployment rate, meaning that increase in government spending causes increase in unemployment rate. The spending priorities of the Nigerian government over time has been more of recurrent rather than capital, hence, is only marginally productive. There is also the issue of high rate of corruption which leads to syphoning funds expended by the government for infrastructural purposes, which is supposed to attract investment, boost production and increase employment. This is similar to Abouelfarag and Qutb (2020) and Nepram et al. (2021) but contradicts Bilan (2020) who found a negative impact.

Also from Table 4, lagged FDI and current period domestic investment reduces unemployment rates. This is expected because the increase in FDI complements domestic investment and boosts production. However, lagged domestic investment appears to exhibit a positive impact on unemployment possibly due to the large-scale investment done in the easy money sectors such as the oil sector, which employs only a fraction of the labour force but happens to be a very lucrative sector. Additionally, private domestic consumption has a positive short-run impact on unemployment rate like in the long-run. This is due to the consumption nature of the economy. Rather than have an expansion of domestic production, the high private consumption expands the outputs of other countries from which goods are imported.

Again, the adjustment coefficient of the model is -0.39 with a probability value of 0.00 and a corresponding t-statistic on 1.98, which implies that it satisfies the dual conditions of negative coefficient and significance. By the coefficient size, shocks to the system which lead to a disruption are adjusted towards long-run equilibrium at a speed of 39%. This is a good fit for error correction considering the nature of the Nigerian economy and the relatively inadequacy of fiscal policy measures. The coefficient of multiple determination (R-squared) value of 0.88 shows that up to 88% of the variations in unemployment are determined by fiscal policy measures and the control variables included in the model. Moreover, the model diagnostic tests of heteroscedasticity, autocorrelation, and normality of residuals all show that the model is adequate and does not violate the classical assumptions. Additionally, the plots in Figure 2 confirm the stability of the model over time.

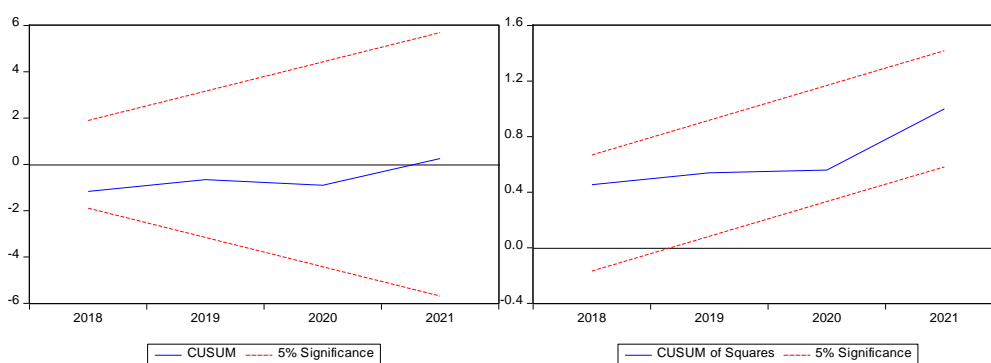


Figure 2: CUSUM and CUSUM of Squares Plots
 Source: Author's own computation from E-views 10

5. Conclusion

This study has examined the impact of fiscal policy on unemployment rate in Nigeria, with consideration of other control variables, which are perceived channels through which fiscal policy effects are passed unto unemployment rates. Analysis done with ARDL on data from 1991 to 2021 has shown that the efficiency of fiscal policy in controlling inflation depends on the tools used and how it is applied. It thus, is recommended that a combination of taxation

and government spending should be considered in the fight against unemployment. Accordingly, an expenditure switch should be considered to ensure that there is less unproductive expenditure and more productive spending for the government. Meanwhile, selective taxation should be explored, where sectors with lesser job creation capacities could be taxed more than those with more capacities to ensure resource availability. The findings of this study can be tested using new dataset or Nigeria or other countries, or by applying more efficient techniques that are superior to the techniques employed in this research. Similar results are expected to be obtained for countries that are similar to Nigeria. This study has faced some limitations in terms of little scope of unemployment data available, and the unavailability of tax revenue data. This has limited the researcher's freedom to explore a wider aspect of the nexus. It is suggested thus that future studies could attempt the analysis of fiscal policy on unemployment based on demographic categories such as females, youths, among others.

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Bio-note

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