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State Dependence and Fiscal Multipliers in Nigeria: An Empirical Analysis

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Abstract

The study investigated the state- dependent effect of fiscal multipliers in Nigeria. We considered the performance of fiscal multipliers in the recession and, also during oil boom. Data for the study was drawn from 1985 to 2023 and employed the Fully Modified OLS, in order to correct the problem of serial correlation and endogenity. The finding showed that government spending exerted statistical and economically impact on the economy. Similarly, the finding of the study showed that there is strong Keynesian effect during recession and oil boom. Lastly, the finding showed that oil boom has not significantly affected the economy. The study therefore recommended that there is need for fiscal discipline in Nigeria and strong formal institutions, in order to ensure that spending during recession and oil boom is properly channeled into productive activities.

Keywords: State Dependence, Fiscal Multipliers, Nigeria Government Spending

Introduction

Government spending has been described as the means by which government provides essential services to the citizens, especially in the developing countries, where government has to be initiator of programmes, projects and policies that promote economic activities. Through such spending, government has been able to reduce income inequality; generate employment; and improve social infrastructure in the country (Sidek, 2021; Nispi – Landi, 2022). Government spending is the key focus of the Keynesian economics and considers as a necessity in the time of economic recession (Keynes, 1936; Blanchard & Johnson, 2013; Mankiw, 2019). Government spending is considered to be an impetus for increase in consumption and further income generation through multiplier effect.

Since the economies of the world pass through times of boom and recession; as such, the spending of the government can change subject to prevailing economic conditions. The pattern of the government spending can change in the period of recession, where there may be the need for the government to spend more in order to cushion the effect of the recession

on households, and business firms. As such, the fiscal multipliers can likely rise, which means the effectiveness of government spending varies significantly depending on the prevailing economic conditions (Fazzari et al., 2015; Canzoneri et al., 2016; Lee et al., 2020; MacManus et al., 2021; Wolff & Jerow, 2022). Studies such as Fazzari et al., 2015; Canzoneri et al., 2016; Lee et al., 2020; MacManus et al., 2021 have shown that the fiscal multiplier can be very high during recession and low during economic boom; while Wolff and Jerow (2022) revealed a different results. To Wolff and Jerow, the size of the fiscal multiplier is low during era of high macroeconomic uncertainty. Despite this result, Wolff and Jerow still found state dependence to be statistically and economically significant.

As pointed out by Penzin and Adamgbe (2019), it can be seen that fiscal multipliers are powerful tools in macroeconomic projections and policy design, especially in the developing countries, such as Nigeria. Nigerian economy is currently characterised by unstable economic environment, which revealed that economic uncertainty presently influences the effectiveness of fiscal policy (Wolff & Jerow, 2022). It is necessary for a study that investigates the performance of fiscal policy in Nigeria, especially during economic recession and oil boom. These two era – eonomic recession and oil boom are period, where government spending has been excessively high due to the need to spend to ensure recovery or spend more because of oil windfall. Studies by Ogbonna et al. (2018), Penzin and Adamgbe (2019), Fasoye (2019), Ogbu and Ogu (2020), Alege and Oye (2024) and Bello (2025) have examined the place of fiscal policy in the Nigerian economy but the findings of these studies showed that there is still vacuum to be filled in relation to fiscal policy and state dependence.

In addition, these studies largely made use of linear frameworks, which assume constant fiscal effects over time. As such, they overlooked the possibility that government spending may be more (or less) during recession and oil booms. In a resource – dependent economy like Nigeria, it is critical to undertake this study, where decisions related to fiscal policies are made under sharply contrasting economic conditions. By empirically investigating the state-dependent effects of fiscal multipliers in Nigeria during economic recession and oil boom, this study shows when government spending is most effective, rather than merely showing whether it is effective. The findings of this study are therefore of important to policy makers who are looking for how to maximise the limited public resources and, also how resource-rich economies can harness fiscal policy more efficiently to promote sustainable development.

Literature Review

State Dependence

State dependence is seen as the idea that the effect of fiscal policy changes over times and varies systematically depending on the prevailing economic conditions. As such, it can be said that fiscal multipliers are not same across business cycle phases, monetary regimes, debt levels and institutional environments. The rise of state dependence can be attributed to some key behavioural and structural parameters, including marginal propensities to consume, price and wage rigidities, financial constraints and so on (Auerbach & Gorodnichenko, 2012; 2013; Christiano et al., 2011; Ilzetzki et al., 2013; Woodford, 2011).

Fiscal Multipliers

Fiscal multiplier is defined as the quantity that describes the extent to which government's fiscal intervention triggers economic activity within an economy. In Keynesian economics, fiscal multiplier is a concept, which arises from the idea that an initial increase in government spending can generate consumption; and such consumption can further generate income, thereby leads to cumulative expansion in economic output (Keynes, 1936; Auerbach & Gorodnichenko, 2012; 2013; Christiano et al., 2011; Ilzetzki et al., 2013)

Theoretical Framework

The theory employed in this study is Keynesian theory. This theory was developed by John Maynard Keynes in his work titled The General Theory of Employment, interest and Money (1936). Keynes claimed that aggregate demand is the primary factor initiating the growth of output, employment, and income in the short run. Keynes saw insufficient demand as the cause of prolonged periods of underemployment. In the words of Keynes, economic recessions occur when the aggregate demand is below the level required to employ all available resources. As such, output and employment fall (Keynes, 1936). This theory also revealed the rigid nature of prices and wages; and claimed that due to institutional constraints and other related constraints, price and wages usually do not adjust downward (Blanchard & Johnson, 2013; Mankiw, 2019).

Keynesian economics pushed for the use of fiscal policy, which advocate the use of expansionary fiscal policy during economic downturns. The increase in government spending, through the multiplier effect, causes greater proportionate increase in national income; which brings about further increase in consumption expenditure (Woodford, 2011; Auerbach & Gorodnichenko, 2012; Mankiw, 2019). The strength of the fiscal policy emerges when there is underutilised capacity in the economy. The mechanism of state dependence revealed that, in recessions, there were idle resources and weak private demand, which necessitates the need for government spending. In this period, government spending does not crowd out private activity. This resulted in large fiscal multipliers. In the contrary, in the period of boom, since the economy is near full employment, crowding out occurs via higher interest rates or prices; which resulted in small multipliers.

Wolff and Jerow (2020) showed that, under Keynesian Theory, fiscal multipliers are influenced by state dependence. This finding came from the study conducted on fiscal policy and uncertainty. Using historical macroeconomic time series, Wolff and Jerow's results showed that the size of the multiplier is small in the period of macroeconomic uncertainty. Another study based on Keynesian theory is that of McManus, et al. (2018). Their study also showed that state dependence is relevant in the era of recession, which promotes the effectiveness of fiscal policy. Contrary to Wolff and Jerow, the findings of McManus, et al. (2018) showed that the size of the fiscal multipliers was large during the recession. Similar results were obtained by Dufrénot, et al. (2019). Their findings showed that the state dependence exerted impact on the fiscal multipliers and the impact of the Keynesian tools was felt during the downturn than during the expansion. As such, Dufrénot, et al concluded that the effectiveness of the fiscal policies varied with economic conditions.

Empirical Review

Blanchard and Perotti (2002) examined the dynamic effects of shocks in government spending and taxes on US activity in the postwar period. Using a mixed structural VAR/event study approach, the authors' results confirmed the positive impact of government spending shocks on output and also, the negative impact of positive tax shocks.

In the study conducted by Barro and Redlick (2011) on macroeconomic effects from government purchases and taxes, the results showed that the effect of tax changes on GDP cannot be attributed to wealth effects but mainly through substitution effects.

Baum, et al. (2012) did a study on the relationship between fiscal multipliers and the underlying state of the economy in the G7 countries, excluding Italy. Baum, et al. showed that fiscal multipliers were not same across countries. As such, it called for fiscal policy that met the needs of each country. In addition, their results showed that the impact of fiscal policy on the output can be affected by the business cycle because, on average, government spending and revenue multipliers took larger proportionate in downturns than in expansions.

The interest of Corsetti, et al. (2012) is on the effect of government spending and how it varies with the economic environment. Corsetti, et al. engaged a panel data of OECD countries and they identified that output and consumption multipliers seemed to be excessively high during era of financial crisis. The authors further identified the fiscal shocks, which they perceived as residuals from an estimated spending rule. Employing a variant of the Curdia – Woodford model of costly financial intermediation, Carzoneri, et al. (2015)'s results showed that fiscal multipliers can be strongly state dependent in a countercyclical manner.

One of the few studies from the Asian countries is by Shi and Fukushige (2015), which focused on the impact of fiscal multipliers on autonomous prefectures in China. The authors employed the autoregressive distributed lags models and found that additional fiscal expenditure could be an impetus in increasing local income and also in enhancing economic growth many of these autonomous prefectures.

Another study by Huidrom, et al (2016) made use of Interactive Panel Vector Auto Regression and model gathering a large data set from advanced and developing economies. Huidrom and others pointed out that fiscal positions influenced the size of fiscal multipliers and these effects can be distinguished from the impact of the business cycle on the fiscal multiplier. They also found out that interest rate channel and Ricardian channel were two factors influencing the state – dependent effects of the fiscal position on multipliers.

The focus of Borsi (2016) is to examine the relationship between fiscal multipliers and credit cycles in the OECD economies. Using impulse responses, Borsi's findings suggested that the large multipliers during credits and expansion fiscal policies were closely associated; that is, the existence of expansionary fiscal policies brought about large multipliers during credit crunch. The study by Castelnuowo and Lim (2019) is on review of recent research findings on the effects of fiscal multipliers in different regimes, such as, normal times, booms/busts times; also, in the presence of the zero lower bound.

Further study from Asia is by Zhang et al. (2019), which focused on fiscal multipliers and state dependence. In this study, using a threshold structural vector autoregressive model, Zhang et al. discovered that the increase in government expenditure exerted significant impact on China's aggregate output. The authors also found that China's fiscal multiplier is procyclical in nature. In the study conducted by Wolff and Jerow (2020), state dependence is found to be statistically and economically significant. Building a DSGE, Wolff and Jerow investigated the relationship between macroeconomic uncertainty and government spending.

Another study from US is from Ramey and Zubairy (2017), who investigated whether US government spending multipliers differ in bad and good times. Ramey and Zubairy made use of historical US data covering the periods of multiple wars and deep recessions and their results showed that there was no evidence to support the existence of differences in the amount of slack in the economy. As such, their findings concluded that government multipliers seemed not to be higher than average in the period of the Great Recession.

Using data from 1991Q1 to 2018Q4 of nine selected Euro area countries, Amendola (2022) established that the linear multiplier was approximately 1.3, which was above the unity. His findings also showed that the multiplier were 2.0 and 0.5 in the slack period and good regime. His findings were also in support of the state dependence. Faria-e-Castro (2022) calibrated a non- linear model to analyse the effect of the US fiscal policy response to the Great Recession. Faria-e-Castro found out that the fiscal responses had not made the consumption to fall; and transfers and bank capitalisations were the largest boosters for fiscal multipliers through new transmission channels.

Applying structural vector autoregressive modelling and data from the 1995 to 2019, Deleidia (2022) estimated the fiscal multipliers in Italy. Deleidia showed that the expansionary fiscal policy could produce positive effects on the GDP level. His findings showed that expenditure-based fiscal plans were better than tax- based policies in achieving the desired results in the economy. One of the recent studies is Kapetamios, et al. (2025), which focused on the use of Jorda local projections method, coupled with the state dependence of parameters, with smooth transition between states to examine the expansionary and contractionary fiscal policy multipliers in US. The findings of Kapetamios, et al. showed that negative shocks could have stronger effects over longer periods of time; and also discovered that pooled- shock estimation could pose serious bias results.

Methodology

This study is exploratory research design, since it involves quantification of the magnitude and direction of relationship between some variables of state dependence and fiscal policy variables. The models used in this study were explained as follows:

We first estimated standard fiscal policy regression, and we specified it as follows:

$$lnRGDP_t = \alpha + \beta lnRGVTE_t + \gamma X_t + \varepsilon_t \quad (1)$$

In the equation (1), *lnR*GDP = log of Real GDP (economic outcome), *lnR*GVTE = log of real government expenditure as proxy for fiscal policy variable, and X = vector of control variables (inflation, and interest rate), *t* = years, and ε = error term.

We further proceed to estimate the state dependence model, in which we introduced a variable to capture the state of the economy. As such, equation 1 is re - specified to give equation 2. It is stated as follows:

$$lnRGDP_t = \alpha + \beta_1 lnRGVTE_t + \beta_2 STD_t + \gamma X_t + \varepsilon_t \quad (2)$$

In equation 2, STD was proxy by recession dummy (DREC) and oil boom dummy (DOIL). We estimated two different models. The first one included the recession dummy (DREC) and the second model included the oil boom dummy (DOIL)

Lastly, we estimated the interaction (state – dependent) regression model. The model including interaction term is specified as Equation 3 below:

$$lnRGDP_t = \alpha + \beta_1 lnRGVTE_t + \beta_2 STD_t + \beta_3 (lnRGVTE \cdot STD)_t + \gamma X_t + \varepsilon_t \quad (3)$$

In equation 3, $lnRGVTE \cdot STD$ = interaction term

The various variables employed in this study were explained in terms of description, measurement and the expected sign in Table 1 below:

Table 1
Description, measurement and expected signs

S/No	Variable	Description	Measurement	Expected sign
1	*ln*RGDP	It is the proxy for economic outcome. It is the log of the GDP	Log	-
2	lnRGVTE	It is the log of the actual government expenditure in monetary term	Log	+
3	DREC	It is a dummy variable introduced to capture era of recession	Categorical value (1, 0). All years when recession (1986–87, 1993–94, 2016, 2020) = 1; otherwise 0	-
4	DOIL	It is a dummy variable to capture the era of oil boom	Categorical value (1, 0). All years when there were oil booms (1990 - 1991, 2003 - 2008, 2010 - 2014, 2021 - 2022) = 1; otherwise 0	+
5	INF	Inflation	Rate	-
6	INT	Interest rate	Rate	-
7	$lnGVTE \cdot DREC$	Interaction between government spending and recession dummy		+
8	$lnGVTE \cdot DOIL$	Interaction between government spending and oil boom dummy		+

Source: Authors' survey

The data used in this study were sourced from Central Bank of Nigeria statistical bulletin, World Development Indicator and National Bureau of Statistics report. The data for real GDP and real government expenditure were obtained from the GDP at market price and government expenditure through this formula:

$$Real\ GE = \left(\frac{Nominal\ GE}{GDP\ deflator}\right) \times 100 \quad (4)$$

Where GE = Government expenditure

$$Real\ GDP = \left(\frac{Nominal\ GDP}{GDP\ deflator}\right) \times 100 \quad (5)$$

We first tested for unit root using Augmented Dickey Fuller test and used the Johansen cointegration test to confirm the existence of long run relationship among the series. All of the series were stationary at first difference. As such, we estimated the models using Fully Modified Ordinary Least Squares (Fully Modified OLS). The Fully Modified OLS helps to account for serial endogenity and serial correlation.

Data Analysis and Discussion

We began the explanation with the properties of the series used in the estimation. Table 2 below provided the statistics of each of the series.

Table 2
Descriptive statistics

	lnRGDP	lnRGVTE	INT	INF
Mean	10.516	8.016	23.727	19.526
Median	10.503	8.077	22.880	12.200
Maximum	11.267	8.796	36.090	76.759
Minimum	9.751	7.083	11.750	0.224
Std. Dev.	0.532	0.399	5.126	17.776
Skewness	0.059	-0.399	-0.088	1.778
Kurtosis	1.404	2.540	3.109	5.263
Jarque-Bera	4.163	1.379	0.070	28.877
Probability	0.125	0.502	0.966	0.000
Sum	410.128	312.625	925.344	761.502
Sum Sq. Dev.	10.763	6.040	998.572	12007.02
Observations	39	39	39	39

Source: Authors' survey

Table 2 provides the descriptive statistics of some of the variables employed in the models. The statistics include mean, median, and standard deviation. The mean and median of the log of the GDP (lnRGDP), log of the real government expenditure (lnRGVTE) and interest rate (INT) were very close, which showed that the series were relatively balanced and, also indicated consistent data points. The mean and median of the inflation rate (INF) were not close; and the standard deviation is very high (17.77). This showed the presence of outliers in the series and volatility. Further examination of the inflation rate (INF) showed that there is large gap between the minimum (0.22) and maximum (76.75).

The standard deviations of 0.532, and 0.399 for log of the Real GDP (lnRGDP), and log of real government expenditure (lnRGVTE) are moderately low showing that the series were less

slightly to be volatile but the log of real government expenditure (*ln*GVTE) is less volatile than the others.

With the Skewness of -0.399 and -0.008 for log of real government expenditure (lnRGVTE), and interest rate (INT), which means these distributions were slightly negatively skewed but the Skewness of 0.059 and 1.778 of log of the GDP (*ln*RGDP), and inflation rate (INF) showed that the distribution is positively skew. The value for inflation showed that it has a long tail to the right, which is an evidence of high inflation spikes. In addition, the Kurtosis of 1.404 and 2.540 for log of the Real GDP (*ln*RGDP) and log of real government expenditure (*ln*RGVTE) showed that these distributions were 'platykurtic' because they were less than 3. As such, the data for log of the GDP (*ln*RGDP) and log of government expenditure (*ln*RGVTE) have flatter peaks and thinner tails that a standard normal distribution.

Considering interest rate (INT), it can be seen that the Kurtosis of 3.109 showed that the distribution is a perfect bell curve, making it 'mesokurtic'. On the other hand, the Kurtosis of 5.263 makes the distribution a 'leptokurtic'. Thus, the distribution has a sharp peak and 'fat tail'. This is a further evidence to show that the data of inflation have extreme values.

Reporting the normality test, the Jarque – Bera probability of 0.125, 0.502 and 0.966 for log of the Real GDP (lnRGDP), log of real government expenditure (lnRGVTE), and interest rate (INT) respectively confirmed that these series followed normal distribution. As such, we cannot reject them for statistical modeling purposes. But the Jarque – Bera probability of 0.000 for inflation rate is much lower than 0.05. Hence, inflation is not normally distributed. From the explanation, we concluded that the log transformation was successful in making the GDP and government expenditure data normally distributed; and also that the characteristics of inflation rate may have some influenced on the state dependence being investigated. There is high possibility that high – inflation periods in Nigeria may have defined the 'state of the economy' rather than the variables of the state of the economy themselves. The spikes in the inflation may have been the determinant of where fiscal multiplier changes most drastically. We move further into test of the stationarity of the various series used in the estimation. Table 3 supplied information on the ADF statistics and the ADF critical values.

Table 3
Unit Root Test

Variable		ADF Statistics	ADF Critical	Order
lnRGDP	Level	-0.690	-2.942	
	First difference	-4.053	-2.943	1(1)
lnRGOVTE	Level	-1.938	-2.941	
	First difference	-8.995	-2.943	1(1)
INF	Level	-3.052	-2.941	
	First difference	-5.553	-2.951	1(1)
INT	Level	-3.213	-2.941	
	First difference	-7.985	-2.943	1(1)

Note: 5% level of significance
Source: Authors' survey

Table 3 provided Unit Root test for the variables used in the models. Augmented Dickey Fuller (ADF) was employed as the test type and the results obtained showed that all of the series in

the models were stationary at first difference. Since all of the series were stationary at first stationary, we proceed to carry out cointegration. We need to estimate the models using Fully Modified Ordinary Least Squares (Fully Modified OLS). Table 4 showed the result of the cointegration test.

Table 4
Cointegration Test (Trace Test)

Method: Johansen System Cointegration Test
Sample: 1987 2023
Trend assumption: Linear deterministic trend
Series: lnRGDP lnRGVTE INF INT

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**Critical value at 0.05**	**Prob.**
None*	0.477	54.912	47.856	0.009
At most 1*	0.407	30.909	29.797	0.037
At most 2	0.266	11.587	15.495	0.178
At most 3	0.003	0.123	3.842	0.726

Note: 5% level of significance
Source: Authors' survey

Table 4 showed that Trace test indicated 2 cointegrating equations at the 0.05 level, which means that there is a long run relationship among the series. This result justified the use of Fully Modified OLS. We reported the results obtained in Table 5.

Table 5
Regression output
Method: Fully Modified OLS
Sample: 1985 – 2023
Dependent variable: *ln*RGDP

Variable	FSR	SDR (DREC)	SDR (DOIL)	IR (DREC)	IR (DOIL)
Constant	-0.762	-0.992	-0.462	-0.856	0.494
	(-0.443)	(-0.572)	(-0.258)	(-0.444)	(0.249)
*ln*RGVTE	1.458	1.489	1.421	1.475	1.290
	(6.142)[a]	(6.236)[a]	(5.560)[a]	(5.784)[a]	(4.637)[a]
INT	-0.014	-0.015	-0.014	-0.016	-0.010
	(-0.809)	(-0.879)	(-0.737)	(-0.885)	(-0.517)
INF	-0.003	-0.004	-0.004	-0.004	-0.004
	(-0.679)	(-826)	(-0.850)	(0.824)	(-0.977)
DREC		0.149		-0.476	
		(0.806)		(-0.137)	
DOIL			-0.004		-3.580
			(-0.029)		(-0.908)
$lnRGVTE \cdot DREC$				0.080	
				(0.181)	
$lnRGVTE \cdot DOIL$					0.442
					(0.913)
R- squared	0.749	0.746	0.752	0.746	0.762
Adjusted R- square	0.726	0.715	0.722	0.706	0.725
Long – run variance	0.154	0.152	0.150	0.157	0.149

Note: [a]5% level of significance; Fiscal Policy Regression (FPR); State Dependence Regression (SDR) with recession dummy; State Dependence Regression (SDR) with oil boom dummy;

Interaction regression (IR) with recession dummy; Interaction regression (IR) with oil boom dummy, and t- statistics in parenthesis.
Source: Authors' survey

The coefficients of determination (R^2) were very high in all the models. It is more than 0.70 indicating that the independent variables explained over 70.0% of the variation in the economic growth. In the same vein, the values of the Long – run variance were low. They were 0.154, 0.152, 0.150, 0.157 and 0.149; and these values showed that the long- run relationship among the variables were very stable and the deviations from the trend are quickly corrected.

The coefficients of the log of real government expenditure (*ln*RGVTE) for all models were positive as expected, which means that government spending exerted significant impact on the economy. They were highly significant and economically substantial in the real world. This finding showed government spending is powerful engine in this dataset for the Nigerian economy. In addition, the coefficient of interest rate (INT) was not significant in all of the models but has the expected sign. These coefficients were not statistically significant and economically negligible. This result may have come from the fact that the cost of borrowing is high in Nigeria, which discourages business firms from making use of loans in financing their businesses.

Similarly, the coefficient of inflation is not (INF) significant in all of the models and has positive sign. The occurrence of positive sign confirmed the current of Nigerian economy, where the economy is passing through period of recession and recovery. As such, it is the result of the current pro- cyclicality of the Nigerian economy.

Furthermore, the coefficient of the dummy variable for recession (DREC) is not significant neither has the expected signs in state dependence model. From this result, it can be seen that the dummy variable for recession has a positive coefficient of 0.149. This result showed that real GDP levels during recessionary periods were 14.9% higher than expansionary periods. This result suggested that the strong long- term upward trend in Nigeria's GDP can be attributed to the situation where recession periods occurred at a higher baseline of production than earlier expansionary periods.

The coefficient of interaction term between real government spending and dummy variable for recession ($lnRGVTE \cdot DREC$) is not significant but has the expected sign. This showed that the additional effect of spending during recession. Since this coefficient is 0.079, we conclude that government spending during recession is more effective. Though 0.079 is not substantially significant, but it confirmed that fiscal policy is more effective in recessions, which provides strong justification for state dependence.

Similarly, the coefficient of the dummy variable for oil boom (DOIL) is not significant neither has the expected sign. One should have expected the coefficient of dummy variable for oil boom to be positive. This result suggested that the evidence of resource curse in Nigeria and the prevalent weak institutions characterising the economy. From the Table 5, one can see that the coefficient of the interaction term of real government spending and dummy variable for oil boom is positive and not significant. This sign conformed to the expectation, in the

sense, that the government spending can be said to be growth- enhancing during oil booms. The oil boom has led to availability of revenue, easy to finance, and occurrence of large – scale projects. Looking at the coefficient, which is 0.442, we conclude that it is economically moderate.

We further computed the values of fiscal multiplier of government spending during recession and oil boom, using:

$$Multiplier = \beta_1 \cdot \frac{Y}{G} \quad (4)$$

We made use of median real GDP and median real government expenditure.

$$Multiplier = 1.458 \cdot \frac{36{,}430.97}{3219.406}$$
$$= 16.498$$

Fiscal multiplier during recession,

$$Multiplier = (\beta_1 + \beta_3) \cdot \frac{Y}{G} \quad (5)$$
$$Multiplier = (1.458 + 0.080) \cdot \frac{36{,}430.97}{3{,}219.406}$$
$$= 17.404$$

Fiscal multiplier during oil boom

$$Multiplier = (\beta_1 + \beta_3) \cdot \frac{Y}{G} \quad (6)$$
$$Multiplier = (1.458 + 0.442) \cdot \frac{36{,}430.97}{3{,}219.406}$$
$$= 21.500$$

In equation (5) and (6), we can see that the multipliers are greater than one. This is an evidence of strong Keynesian effect during recession and oil boom. As such, a one percent increases in government spending raises GDP by 17.404 units and 21.5 units respectively during recession and oil boom.

The findings of these studies have conformed to the findings of some of the previous studies (See Fazzari et al., 2015; Canzoneri et al., 2016; Lee et al., 2020; and MacManus et al., 2021). The fiscal multipliers stood around 17.404 and 21.500 for economic recession and oil boom in the period under study. Comparing these values, with the value obtained in equation 4, which is 16.498. One can conclude that the occurrence of recession and oil boom in Nigeria has exerted economically and statistical impact on the growth of the economy.

Conclusion

This study has concluded that there is clear empirical evidence to ascertain the Keynesian effect on the Nigerian economy during recession and oil boom. In addition, the size of fiscal multipliers depend on the prevailing economic conditions. Also, there is empirical evidence to support the existence of resource curse in Nigeria and the growth-enhancing nature of the oil boom. This study therefore recommend that there is strong formal institutions in Nigeria has to reduce the effect of leakages that made oil windfall not being channeled to productive activities. Lastly, there should be fiscal discipline because fiscal policy is highly effective during recession.

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