THE NIGERIAN FISCAL STANCE AND MACROECONOMIC PERFORMANCE: A COMPUTABLE GENERAL EQUILIBRIUM (CGE) ANALYSIS

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Abstract

In recent times, Nigeria has implemented fiscal policy reform in the form of an increase in the Value-Added Tax (VAT) rate and channelled considerable expenditure toward the fiscal stimulus programmes. The objective of this reform is to set the economy back on its growth trajectory. The likely impact of these non-complementary fiscal instruments on macroeconomic variables is yet to be assessed empirically within a consistent macroeconomic framework. Therefore, this paper set out to provide a quantitative ex-post assessment of this policy by utilizing the Computable General Equilibrium approach. Surprisingly, the increase in the VAT rate and spending policy mix scenario is found to be the most desirable policy in terms of improvement in real GDP, consumption and household incomes. Similarly, in terms of sectoral effect, the mix policy scenario is also found to be the most desirable policy in terms of improvement in output performance and employment. Furthermore, the study found that the agriculture and private services sectors have the highest growth potential to be the new engine of growth for the economy. The major conclusion of this paper is that an increase in the VAT rate and spending policy mix results in an overall macroeconomic improvement in Nigeria.

Keywords: Computable General Equilibrium, Government Expenditure, Economic Growth, Nigeria
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Introduction

Historically, oil price crashes precede economic crises in Nigeria (Uwatt, 2017). It can be observed from Figure 1 that in Nigeria per capita Gross Domestic Product (GDP) has been on a downward trend owing to the impact of 2014 to 2016 global dip in oil prices, the accompanied 2016 recession, and more recently, the impact of COVID-19 on international commodity markets that affected global crude oil prices and production.

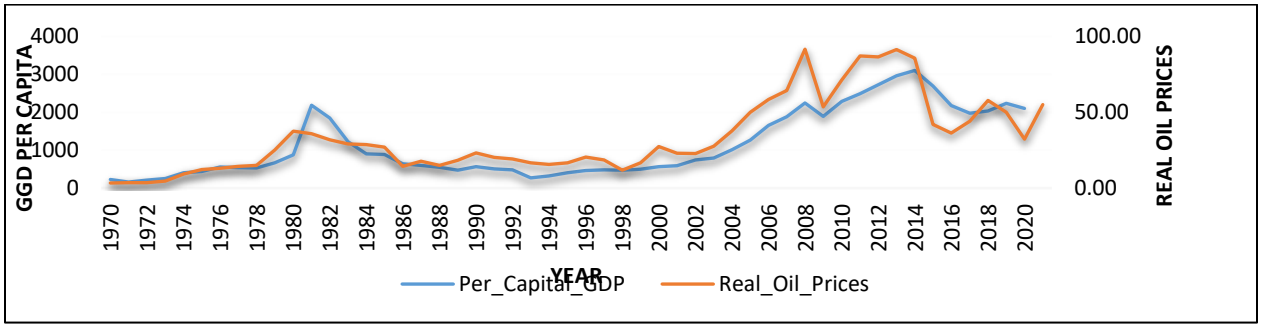

Figure 1 Real Oil Prices and GDP per Capita in Nigeria
Sources: Oil Price from FRED and GDP from the World Bank

This downward trend in real GDP per capita is normally associated with a decrease in incomes and employment as firms released factors. It follows that investment, consumption and aggregate demand would also contract.

Achieving sustainable growth is challenging particularly in an oil-dependent economy like Nigeria, where oil prices significantly determine economic growth. Hence, fine-tuning the economy to its growth trajectory has become a key developmental plan of the Nigerian government as contained in its Economic Recovery and Growth Plan document (FGN, 2017). To this end, the Nigerian government deployed fiscal policy measures in the form of an increase in the Value Added Tax (VAT) rate and channelled considerable expenditure toward fiscal stimulus programmes to restore the economy to its growth trajectory. For example, in 2016 Nigeria launched the National Social Intervention programme and set aside N500b annually (CBN, 2016).

However, only N79.98 billion was released in 2016, N140 billion in 2017, and N250.4 billion in 2018 (Repor, 2020). Similarly, from 2017 to 2021 the federal government of Nigeria released N554.61[1] on the anchor borrower programme. Likewise, in response to the COVID-19 pandemic, the Federal Government of Nigeria designed the COVID-19 Cash Transfer Project in 2020 and set aside N10 [2] billion. To fund part of these programmes, the 2019 Finance Act raise the VAT rate to 7.5 per cent from 5 per cent. This increase in the VAT rate is born out of necessity as the country requires resources to finance its programmes and the 2020 budget (Sani-Omolori, 2019). With these policies in place, the Nigerian economy is expected to get back to its growth trajectory.

Though getting the Nigerian economy back to its growth trajectory is a core agenda, the fiscal policy stance put in place is complex and openly contested considering the fragile state of the Nigerian economy in recent years. This concern is further heightened by the Keynesian theoretical proposition, which promotes government spending during an economic downturn. Even though, the theory is silent about the source of finances for such programmes. In Nigeria, understanding the direct and indirect impact of the current fiscal stance on macroeconomic variables remains a challenge. Fiscal stimulus policies partly financed through an increase in the VAT rate are found to be pro-growth policies. Although this is evident in Mengistu (2013), it has not been well documented especially in Nigeria where this type of policy is implemented recently.

In Nigeria, despite a quiet number of empirical studies on the effectiveness of an expansionary fiscal policy, the economy-wide studies to assess the impact of fiscal stimulus programmes partly financed through an increase in the VAT rate are scarce. Mentions can be made of these studies. Akpan and Atan (2015), and Ekpo (2017). These studies conclude that fiscal stimulus leads to economic growth. Another strand of literature on fiscal policy in Nigeria focuses on the welfare implication of the VAT rate increase. For example, Aminu (2019) found that Nigeria can achieve a 15 per cent VAT rate increase that satisfies both the public and ensure maximum revenue generation within four years.

The literature however could be extended further by examining the economy-wide impact of fiscal stimulus programmes partly financed via an increase in the VAT rate within a consistent framework. Therefore, this paper seeks to provide empirical evidence to support discussions related to the impact of the Nigerian fiscal stance on macroeconomic variables.

Fiscal policy is an effective tool deployed by governments to restore growth to its trajectory. The interest of this study on fiscal policy emanates mainly from the likely impact of fiscal stimulus programmes partly

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[1] https://nairametrics.com/2021/05/18/how-to-sign-up-for-cbns-anchor-borrowers-programme/

[2] https://www.premiumtimesng.com/business/business-news/467708-fact-check-buharis-claimon-lifting-10-5-million-people-out-of-poverty-misleading.html

financed via an increase in the VAT rate, bearing in mind the fragile state of the Nigerian economy amidst limited fiscal space.

There are two theoretical positions in this regard. One view is that properly targeted and timed fiscal policy intervention is very effective in stimulating a recessionary economy (Ekpo, 2017; Fatás & Summers, 2018). The alternative view is that fiscal response to economic crisis creates a negative wealth effect thereby making fiscal stimulus ineffective (Fatás & Mihov, 2009). Therefore, this study is anchored on the Keynesian theory.

The link between fiscal policy and economic growth within the context of a CGE model is well established in the literature. Among others are Mabugu et al. (2013), Mengistu (2013) and Resosudarmo et al. (2020). Both studies assess the effectiveness of fiscal policy in getting a recessionary economy back to its growth trajectory. These studies conclude that fiscal stimulus has a positive and significant impact on output growth through its various components.

To achieve the said objective, this paper utilised the International Food Policy Research Institute (IFPRI) standard CGE model developed by Lofgren et al. (2002) to assess the current fiscal stance in Nigeria by proving an empirical assessment of the impact of fiscal stimulus programmes partly financed via an increase in the VAT rate on macroeconomic variables, which is rarely found in the Nigerian economic literature. The assessment of the Nigerian fiscal stance provides valuable insight into the effectiveness of the policy in fine-tuning the economy to its growth path.

The description of the data used and the CGE model applied in this study are presented in the next section. Thereafter, a section that presents the description of the simulation scenarios implemented to capture the Nigerian fiscal stance and the analytical framework developed for this study is followed. The section that follows relates to the presentation and discussion of results aimed at analysing the impact of the Nigerian fiscal stance on macroeconomic variables. This paper ends with conclusion and policy implications based on its findings.

Methodology

Social accounting matrix (SAM)

To assess the impact of the Nigerian fiscal stance on macroeconomic variables using the computable general equilibrium model approach, a reasonably reliable SAM is required. For this study, a 2016 Social Accounting Matrix (SAM) for Nigeria is constructed to serve as the benchmark data for calibrating the Model. The construction is achieved through the following steps. In the first stage, the 2011 Nigerian input-output table construed by Falokun (2012) is aggregated into six activities (agriculture, oil, manufacturing, energy, private service, and public administration). Thereafter, the aggregated 2011 input-output table for Nigeria is updated with the 2016 National accounting data sourced from CBN (2017). The construction of a highly aggregated SAM was followed, to reflect the consistent macroeconomic structure of the Nigerian economy in 2016. At the final stage, the coefficients of the 2011 updated input-output table were used to disaggregate activities and primary factors of the SAM, while the household was disaggregated based on the percentage of poor and non-poor as in the 2020 Nigerian Living Standard Survey (NBS, 2020). The macro-SAM for this study is presented in Table 1. Each cell in the matrix represents the flow of economic activity in monetary terms, where income is recorded on the rows while expenditure is recorded on the columns (Nwafor et al., 2010). However, the SAM constructed is most likely to be limited by the assumption that the production structure of the economy is the same as that of 2011.

Table 1: 2016 Social Accounting Matrix for Nigeria

	Factors	Households	Government	ROW	Activities	Commodities	Export	YTAX	STAX	IMTAX	ACC	TOT
Factors					103760.7							103760.7
Households	82669.22		5073.214	2107.016								89849.45
Government	15344				875.7486			77.34499	452.4193	306.1501		17055.66
ROW		4.403031				12367.39					-17.5132	12354.28
Activities		78726.58	13289.86			107869					15498.71	215384.2
Commodities					110747.7		10247.26					120995
Export				10247.26								10247.26
YTAX		77.34499										77.34499
STAX						452.4193						452.4193
IMTAX						306.1501						306.1501
ACC	5747.478	11041.13	-1307.41									15481.2
TOT	103760.7	89849.45	17055.66	12354.28	215384.2	120995	10247.26	77.34499	452.4193	306.1501	15481.2	

Source: Authors' Computation, 2022.

The computable general equilibrium(CGE) model

To achieve the set objective of this study, a Standard CGE model developed by Lofgren et al (2002) is adopted. It is a real sector model as only relative prices matter. The model consists of several non-linear equations describing the optimal behaviour of different agents, including some accounting identities. The central focus of this paper is to assess the impact of the Nigerian fiscal stance on macroeconomic variables.

Therefore, the model takes care of constraints faced by the government in financing its expenditure by capturing different types of taxes and other sources such as debt. In the same vein, the model takes into account different government spending instruments such as transfer payment, government spending, government consumption and subsidies.

To achieve a feasible solution, the following closure rules are adopted. For factor closure, we assumed a fixed supply of labour and disaggregate it into unskilled and skilled. Furthermore, labour is assumed to be unemployed and mobile across activities. Similarly, the model assumed a fixed supply of land, which is employed fully and mobile across activities. Likewise, capital is also assumed to be fixed while being fully employed and activity-specific. For the macro closure, the model assumed exogenous direct tax rates and flexible government savings to equilibrate the economy. Similarly, the model assumed exogenous foreign savings and flexible exchange rates to equilibrate the economy. We also assumed a fixed propensity to save for all non-government domestic agents and flexible capital formation to achieve equilibrium in the economy.

Finally, the Domestic Price Index (DPI) is assumed to be the numeraire while the Consumer Price Index (CPI) is allowed to adjust so that the economy can be in equilibrium. The model is also made up of several blocks. Below are some of the key behavioural equations.

Household

The utility function of the representative household is described by Stone-Geary utility functions as presented in equation 1

$$Max_i U_h = \coprod_i = \left(C_{h,i} - \gamma_{h,i}\right)^{\beta_{h,i}} \quad s.t \sum_i P_i C_{h,i} = \left(1 - s_h\right)\left(1 - yt_h\right)Y_h \qquad 1$$

Where the consumer maximises her utility subject to her budget constraint. In the above maximisation problem, $C_{h,i}$ represent the consumption level for goods i while $\gamma_{h,i}$ represents the level of substitution for goods i, and finally $\beta_{h,i}$ is the marginal budget share of goods i. The household has a total income Y_h out of which she saves a portion: $S_h\left(1 - y_{t,h}\right)Y_h$ and pays an income tax $y_{t,h}$. In the budget constraint equation, P_i is the price for goods i and S_h is the saving rate of the consumer.

The household problem is represented by a demand function as presented in equation 2, which is the solution for equation 1.

$$C_{h,i} = \frac{\beta_{h,i}\left[\left(1 - S_h\right)\left(1 - y_{t,h}\right)Y_h - \sum_j P_j \gamma_{h,j}\right] + \gamma_{h,i}}{P_i} \qquad 2$$

Firms

Producers maximise profit subject to their respective production technology, which follows a nested structure. At the top level, each sector follows a Leontief production function to produce output by combining a fixed share of value-added and intermediate goods. While at the bottom level, each sector follows a Constant Elasticity of Substitution (CES) technology to determine its value added by combining composite labour and capital.

$$X_i = \lambda_i \left(\sum_f \alpha_{i,f} v_{i,f}^{-\rho_i} \right)^{-\frac{1}{\rho_i}} \quad 3$$

From the above equation, X_i is the output of the sector i, λ_i is the factor productivity level, α_i is the parameter for factor v_f s employed in the production of the good i.

Government

In the model, the government has no behavioural function but serves as an institution with income and spending activities. The government generates income through different forms of taxes. Among others: are household taxes $TDHT_t$, business taxes $TDFT_t$, tax on domestic products and import $TPRCTS_t$ s, and other taxes on production $TPRODN_t$. Additional sources of revenue to the government include the remuneration of capital YGK_t and transfer from other agents $YGTR_t$. A negative tax represents a subsidy. The government spent its revenue on government transfers to other agents $TR_{agng,gvt,t}$ and government consumption G_t. Government savings $SG_t = YG_t - \sum_{agng} TR_{agng,gvt,t} - G_t$ is the difference between government income and expenditure. A positive value represents surplus otherwise deficit.

$$YG_i = \sum_h y_t DTHT_t + \sum_i a_t TDFT_t + \sum_f f_t TPRCTS_t + YGK_t + YGTR_t - \sum_{agng} TR_{agng,gvt,t} - G_t \quad 4$$

Description of policy simulations

To achieve the set objective of this study, the following policy scenarios are considered:

a) **Baseline scenario:** This is considered the reference scenario without any policy intervention.

b) **Scenario one:** The impact of domestic revenue mobilisation on the key macroeconomic variables is captured through an increase in the VAT rate. A 50 per cent increase in the VAT rate is considered based on the recent increase in the VAT rate from 5 per cent to 7.5 per cent in 2020.

c) **Scenario two:** The effect of social intervention programme shock on macroeconomic variables is captured through an increase in government consumption of agricultural commodities. A 450 per cent increase in government demand for agricultural commodities is considered based on the amount spent on the anchor borrower programme in 2017 (N100b)[3] and the amount spent on the programme in 2021(N554.61)[4].

d) **Scenario three:** The impact of fiscal stimulus shock on the macroeconomic variable is captured through an increase in the amount spent by the government on conditional cash transfers. A 216 per cent increase in government transfer payments to the poor household is considered based on the N79.98 released in 2016 and N250.4[5]released in 2018 for conditional cash transfer.

a) **Scenario Four:** Scenario one +Scenario two + Scenario three: The combined effect of fiscal response (fiscal stance) on macroeconomic variables is captured through the first three scenarios

[3]https://www.thisdaylive.com/index.php/2018/08/30/farmers-draw-n150bn-from-cbns-anchor-borrowers-programme/

[4] https://nairametrics.com/2021/05/18/how-to-sign-up-for-cbns-anchor-borrowers-programme/

[5]https://www.premiumtimesng.com/news/top-news/331305-n479-billion-released-for-social intervention-within-three-years-presidency.html

Analytical framework

The competitive general equilibrium theory is adopted as the theoretical framework that guides the through-process of the analytical structure of this study. The theory is rooted in the neo-classical tradition and founded strongly on the Walrasian theory of market behaviour

Block arrows in figure 2 represent the principal transmission mechanism of fiscal policy shock to macroeconomic variables.

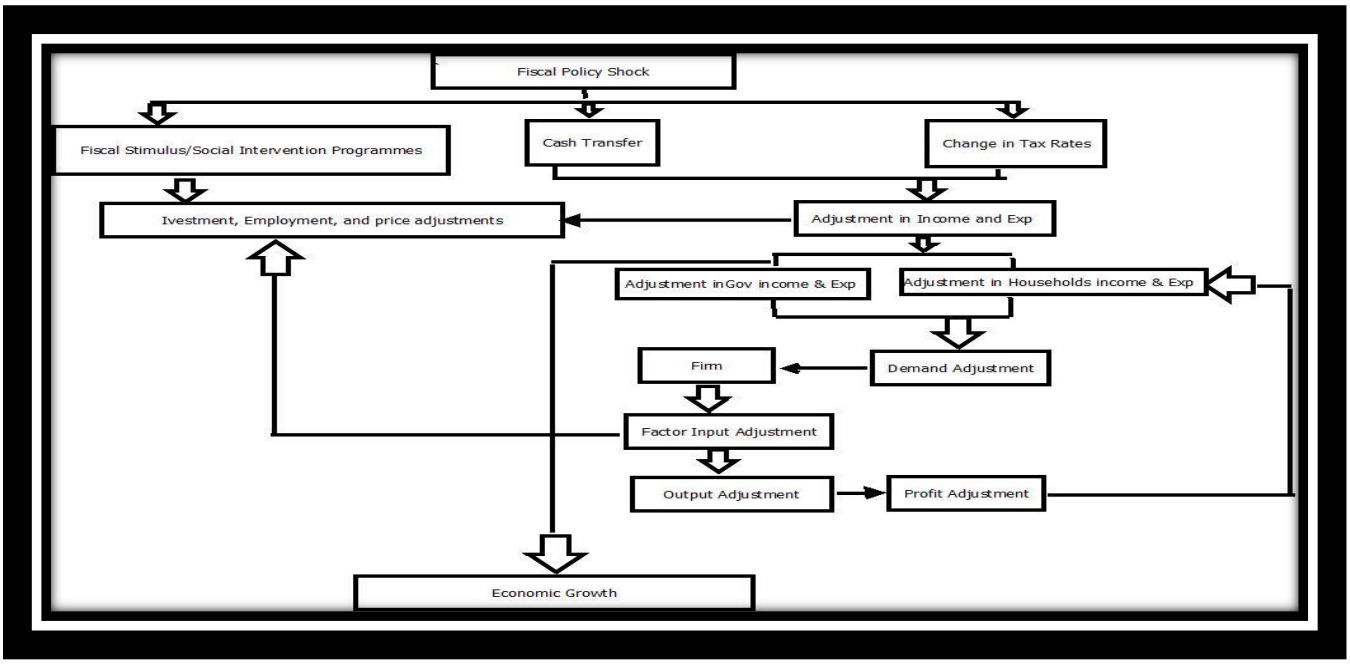

Figure 2 The Transmission Channels of Fiscal Policy Shock to Macro-variables
Source: authors

It starts from the shock in the form of either fiscal stimulus policies, social intervention programmes or adjustments in tax rates, which directly affect the economy through adjustments in income, investment, employment, and prices. It follows that the income and expenditure of both government and the household would be adjusted, leading to an adjustment in demand. The resulting changes would lead to a change in firms' output via a change in demand. Prices would adjust in response to such changes in demand. To meet up with the new demand, firms would invest and adjust their factor input. This new demand for factor input would lead to further income adjustment. The overall adjustment in investment, income, employment, and consumption would translate to a change in economic growth

Analysis of Result

To appreciate the discussions and analysis, this study employed the percentage change relative to base year value criteria, because it capture the average effect over the simulation period. The simulation results of this study for the selected macroeconomic indicators are reported in Table 1. Under simulation 1, most of the key macroeconomic variables recorded a positive change following a 50 per cent increase in the VAT rate. As real GDP at factor cost improved by 0.03 per cent. Similarly, the economy witnessed a 2.7 per cent increase in investment accounted for by the increase in government income by 10.58 per cent. These increases offset the 0.38 per cent decrease in consumption brought about by the 0.17 per cent decrease in income and the corresponding 2.05% decrease in demand. Absorption showed a 0.01 per cent increase accounted for by the increase in investment and the 0.32 per cent increase in government expenditure. In response to the VAT rate increase, CPI increased by 0.33 per cent. Implying that increase in the VAT rate is inflationary in Nigeria. Similar results were found by Mengistu (2013) for the case of Ethiopia except in

the case of Nigeria the VAT rate increase leads to a slight increase in real GDP at factor cost. In the same vein, real GDP at factor cost increased by 0.08 per cent under simulation 2. Contrary to the first simulation result, investment decreased by 2.78 per cent as the government income decreased by 0.16 per cent. Likewise, absorption increased by 0.08 per cent to offset the decrease in investment as government expenditure, household income, domestic demand and private consumption increased by 5.35 per cent, 0.14 per cent, 1.25 per cent and 0.09 per cent respectively. The increase in consumption could be attributed to the slight decrease in CPI by 0.015 per cent. This finding is supported in the literature by Mengistu (2013).

Real GDP at factor cost recorded a positive change of 0.24 per cent due to the significant improvement in household income by 4.46 per cent under simulation 3. Even though investment decreased significantly by 9.40 per cent, absorption recorded a positive change of 0.25 per cent brought about by the increase in government income and expenditure by 0.87 per cent and 19.80 per cent respectively. So does private consumption, which recorded a 1.65 per cent increase, as the domestic demand increased by 26.40 per cent. Like the second simulation, the CPI decreased by 0.023 per cent. This finding is consistent with that of Resosudarmo et al. (2020) for Indonesia.

Table 2 Performance of Selected Macroeconomic Indicators

Macro Indicators	Base Values	SIM1	SIM2	SIM3	SIM4
Real GDP	107.65	0.03	0.08	0.24	0.35
Absorption	112.81	0.01	0.08	0.25	0.33
Investment	13.33	2.70	-2.78	-9.40	-9.48
Private Consumption	93.47	-0.38	0.09	1.65	1.35
Government Income	3.85	10.58	-0.16	0.87	11.29
Government Expenditure	6.83	0.32	5.35	19.80	25.48
Price Index	1.00	0.33	-0.015	-0.023	0.29
Household Income	93.47	-0.17	0.14	4.46	4.43
Demand	157.74	-9.84	1.25	26.40	17.81

Source: Authors' Computation, 2022.

Simulation 4 shares a similar trajectory with simulation 3 except for the CPI. Real GDP at factor cost increased by 0.35 per cent. The significant increase in the government income and expenditure by 11.29 per cent and 25.48 per cent respectively lead to an increase in absorption by 0.33 per cent, which offset the 9.48 per cent decrease in investment. Even though, household income and CPI changed by 4.43 per cent and 0.29 per cent respectively. While private consumption changed by 1.35 per cent compared to its value under simulation 3.

Sectoral effects

The result in Table 3 shows the sectoral output growths following the simulation exercises presented in section three. In simulation 1, most of the sectors recorded a negative growth except for the agricultural sector and the oil sector. Agricultural sector output grows by 0.22 per cent, this is so because the sector is exempted from VAT and a certain percentage of households may substitute industrial commodities with agricultural commodities. Similarly, the oil sector showed a 0.09 per cent growth as the Petroleum Motor Spirit (PMS) component of this sector received a subsidy. Increases in the VAT rate generate price-related effects as well as a decrease in factor returns and an increase in the CPI. Consequently, industrial, energy and private service sectors recorded negative growth of 0.17 per cent, 2.13 per cent and 0.12 per cent respectively.

In simulation 2, the agricultural sector recorded a positive growth of 0.39 per cent as investors reallocate their resources to this sector. Being not a priority sector, the oil and energy sectors lose 0.01 per cent and 0.12 per cent of their output respectively. This could be attributed to the investment substitution effect. The energy sector grows by 0.15 per cent while the private service sector maintained its status quo.

In simulation 3, an increase in transfer to poor household leads to an improvement in households' income and boost their demand for non-agricultural products. Consequently, agricultural output decreased by 0.24 per cent while output levels in industrial, energy and service sectors grow by 0.20 per cent, 1.19 and 0.78 per cent respectively. It is expected that the increase in the demand for non-agricultural output could lead to an increase in factor demand. Surprisingly, the oil sector recorded slightly negative growth of 0.01 per cent despite the increase in energy sector output.

Table 3 Sectoral Outputs Performance

Sectors	Base Values	SIM1	SIM2	SIM3	SIM4
Agriculture	34.20	0.22	0.39	-0.24	0.38
Oil	44.34	0.09	-0.01	-0.01	0.30
Manufacturing/Industries	20.67	-0.17	-0.12	0.20	-0.10
Energy	3.33	-2.13	0.15	1.19	-0.79
Private Service	70.29	-0.12	0.00	0.78	0.66
Total Output		-2.11	0.41	1.92	0.45

Source: Authors' Computation, 2022.

Simulation 4 results in an increase in output levels of agriculture, oil and service sectors by 0.38 per cent, 0.30 per cent and 0.66 per cent respectively. While the industrial and energy sectors recorded negative growth of 0.10 per cent and 0.78 per cent respectively.

Sectoral output can also be analysed by tracing changes in the demand for and supply of factor inputs. In Table 4, the simulation results related to a factor demand by activities are reported. In simulation 1, the agricultural and service sectors absorbed the unskilled labour released by the industrial and energy sectors. The industrial and energy sector released 0.87 per cent and 4.87 per cent respectively of their unskilled labour, while the agricultural sector absorbed 0.81 per cent and allowed the residual to be absorbed by the service sector. The increase in the demand for unskilled labour in the agricultural sector could be attributed to price and substitution effects created by the increase in the VAT rate as the sector is exempted from VAT. The increase in the demand for unskilled labour in the service sector could be attributed to the informality of a significant portion of the sector. Contrarily, the demand for skilled labour decreased in all the sectors with the energy sector having the highest decrease of 5.27 per cent while the agricultural sector has the least decrease of 0.01 per cent.

In simulation 2, the agricultural sector recorded the highest demand for unskilled labour, precisely, 1.46 per cent increased as the government demand for agricultural commodities increase while the service sector recorded the lowest demand for unskilled labour due to the rising demand for unskilled labour in the agricultural sector. Similarly, the demand for skilled labour in the agricultural sector also change significantly (2.10%). This could be attributed to the high demand for extension workers. The industrial

sector recorded a negative change of 0.29 per cent in its demand for skilled labour. This could be attributed to the decrease in the demand for industrial commodities.

Simulation 3 increases the demand for unskilled labour in most sectors, as poor households, can now substitute some unprocessed foods with manufactured commodities, while others now have access to energy. Specifically, the demand for unskilled labour in the industrial, energy and service sectors increased by 0.89 per cent, 2.19 per cent and 1.08 per cent respectively. Surprisingly, all sectors recorded a positive change in the demand for skilled labour, especially, in the service sector by 4.49 per cent.

In simulation 4, all sectors recorded a positive change in the demand for unskilled labour except for the industrial and energy sectors. The service sector recorded the highest demand for unskilled labour by 1.90 per cent followed by the agricultural sector while the energy sector showed the highest decrease of unskilled labour by 2.85 per cent. Likewise, the service sector recorded the highest demand for skilled labour by 4.78 per cent while the energy sector recorded the highest decrease in the demand for skilled labour by 1.63 per cent.

Table 4 Demand for Factor by Activity

Sectoral Impact	Type of Labour	Base	SIM1	SIM2	SIM3	SIM4
	Unskilled	322.82	0.81	1.46	-1	1.27
Agriculture	Skilled	16.48	-0.1	2.1	0.66	2.67
	Unskilled	307.66	0.74	-0.11	-0.31	0.31
Oil	Skilled	1.68	-0.17	0.52	1.36	1.71
	Unskilled	444.36	-0.87	-0.93	0.87	-0.94
Industries	Skilled	10.24	-1.79	-0.29	2.61	0.53

	Unskilled	31.63	-4.87	0.06	2.19	-2.85
Energy	Skilled	7.72	-5.44	0.48	3.33	-1.63
	Unskilled	26.52	0.85	-0.03	1.08	1.9
Service	Skilled	78.51	-0.95	1.24	4.49	4.78
Total Employment			-11.79	4.5	15.28	7.75

Source: Authors' Computation, 2022.

Conclusion and Policy Implication

Discussion on the impact of the Nigerian fiscal stance in the form of an increase in fiscal stimulus programmes partly financed through an increase in the VAT rate is yet to be supported by any empirical evidence. Therefore, this study set out to assess the economy-wide impact of this policy. Our concern about the impact of the Nigerian fiscal stance on macroeconomic variables stems from the fact that within a decade Nigeria experienced at least three economic downturns amidst limited fiscal space. As the country relied heavenly on the volatile oil revenue, which makes domestic revenue mobilisation the most reliable source of revenue to be spent on fiscal stimulus programmes to restore growth to its trajectory.

The research has shown that an increase in the VAT rate scenario results in the least impact on real GDP as well as output production and factor employment. Similarly, household income and consumption shrink following the implementation of an increase in the VAT rate policy. Conversely, we found that an increase in spending policy scenarios results in a significant impact on real GDP through its various components. Similarly, the sectoral effects of these expenditure policies indicate an overall improvement in output performance and labour employment. Interestingly, an increase in the conditional cash transfer policy appears to have the highest impact on real GDP as well as output performance and employment in the short run.

Moreover, the tax and expenditure policy mix scenario is found to be the most desirable policy, as it results in the highest improvement in real GDP through its various components. Similarly, output performance and employment are found to be more favourable under the policy mix scenario than under either an increase in the VAT rate policy scenario or an increase in the government consumption of agricultural commodities scenario.

From the foregoing, we deduced the following policy implications for this study. Firstly, it appears that Nigeria is pursuing its Domestic Revenue Mobilisation (DRM) policy.

Secondly, an increase in the VAT rate policy would not result in much improvement in real GDP through it various components. This is so because tax policy is found to have a dominant short term negative impact on macroeconomic variables in Nigeria. This result indicates that an increase in the VAT rate policy must be accompanied by other spending policies to achieve economic growth through its components. Expenditure policies are found to be pro-growth policies, especially the conditional cash transfer policy. The results from this study imply that the Nigerian government can deploy both increases in the VAT rate and spending policies simultaneously to achieve economic growth as well as output productivity and employment.

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