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Effect of Fiscal Policy on Sectoral Output Growth in Nigeria

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Abstract This study broadly examined the effect of fiscal policy on sectoral output growth in Nigeria for the period of 1970-2013. The study employed an Autoregressive Distributed lag (ARDL) and Error Correction Model (ECM). The results showed that total fiscal expenditure (TEXP) have positively contributed to all the sectors output with an exception of agriculture sector. The findings established that manufacturing sector has a positive relationship with all the determinant variables, while inflation rate has negatively impacted output growth of the various sectors with an exception of manufacturing sector. The study concluded that the existence of disparity in the sectoral response to fiscal policy variables underscored the difficulty of conducting uniform and economic wide fiscal policy in Nigeria. Therefore, the best policy approach is to adopt sector specific policy based on their relative strength and significance in each sector of the economy within the overall fiscal policy mechanism framework.

Keywords Fiscal Policy, Sectoral Output; ARDL Model

1. Introduction

The achievement of macroeconomic goals namely; full employment, stability of price level, high and sustainable economic growth, and external balance, from time immemorial, has been a policy priority of every economy whether developed or developing economies (Akanni and Osinowo, 2013). The realization of these goals undoubtedly is not automatic but requires policy guidance. This policy guidance represents the objective of economic policy. Fiscal and monetary policy instruments are the main instruments of achieving the macroeconomic targets.

Fiscal and monetary policy instruments are the main instruments of achieving the macroeconomic targets. The basic fiscal policy instruments are public expenditure and tax while the monetary policy instruments include the devices of reserve requirements, discount rates and open market policy. Given the fact that fiscal policies impact on economic growth and development, it is not surprising that they are interrelated (Akanni and Osinowo, 2013).

In this regard, the interrelationship between public spending and sector output performance is of paramount importance. On one hand, Government expenditure can provide an impulse for sector output growth, while on the other hand; it can be harmful if it results in budget deficits and leads to competition for scarce financial resources from the banking sector as the government seeks to finance the deficit (Ezeoha and Chibuike, 2005).

Based on these theoretical propositions, empirical questions have been raised on whether this consensus views on the effect of fiscal policy on the real output holds for the different sectors of the economy. Existing studies have shown that the effect of government expenditure on sectors output varies and such variation might arise because of the relative strength of a particular channel of fiscal expenditure on some sectors than other sectors (Loto, 2011). Also, the possibility of a differential response between sectoral output and aggregate output to monetary policy measures has been investigated by (Saibu and Nwosa, 2011), neglecting the effect of fiscal spending on sector output.

Economic theories suggest that an increase in government expenditure on socio-economic and physical infrastructures encourages economic growth. For example, government expenditure on health and education raises the productivity of labour and increase the growth of national output. Similarly, expenditure on infrastructure such as roads, communications, power, etc, reduces production costs, increases private sector investment and profitability of firms, thus fostering economic growth. Supporting this view, Abdullah (2000) and Al-Yousif (2000) concluded that expansion of government expenditure contributes positively to economic growth.

However, Abu and Abdullahi (2010) did not support the claim that increasing government expenditure promotes economic growth, but rather agreed that higher government expenditure may slowdown overall performance of the economy.

Attaining a stable macroeconomic environment requires

the joint effort of both sound fiscal and monetary policies (Saibu, 2010). In recent time, the studies on fiscal policy, as a complimentary effort to monetary policy, has shifted to the role that fiscal adjustments play in promoting sector output and macroeconomic stability (World Bank, 2003).

Similarly Saibu (2010) examines the casual relationship between fluctuation in real outputs and changes in fiscal and monetary policies in Nigeria from 1960 to 2003. The study concluded that the cause of real output fluctuation may be externally induced and degree of economic openness plays crucial role in real output fluctuation in Nigeria. The question then is what form of fiscal policy rules will perform better in reducing debt accumulation and promote the necessary medium-term budget deficit stability and thus stimulate the sector output growth.

One of the most important objectives of Nigeria's fiscal policy is to reduce national debt and to check the interest payments on such debt from rising, and prevent it from leading to higher deficits in the future. Unfortunately, in Nigeria, government fiscal deficits increased continuously in the past two decades. Government debt as a percentage of GDP continued to increase, jumping to 1128.6 percent in 2002 and 1186.7 percent in 2004, but again declined to 751.2 percent and 370.0 percent in 2005 and 2006, respectively (Obi and Abu, 2009).

It has, for instance, recently been noted that: "Government deficits have posed significant problems for the country since the oil boom of the '70s. Expansionary fiscal policies prompted by the favorable oil proceeds in the international market resulted in large fiscal deficits and the rapid build- up of external and domestic debts. With expenditure rising faster than revenue, deficits grew from an average of 5.0 percent of GDP in 1983-86 to 10.3 percent in 1991-94 before declining to 4.9 percent in 1999-2002. The deficit problem has remained persistent because of "government's inability to reduce the level of expenditure to sustainable levels (Akanni and Osinowo, 2013; Ezeoha and Chibuike, 2005; Alade, 2003).

Finding a solution to this problem cannot thus be ignored. This is more so in the light of the low economic growth status of the nation and the ever-increasing budget deficit. In Nigeria, despite the invaluable significance of economic stabilization policy in the actualization of sustainable development, there seems to be no comprehensive study in Nigeria that has investigated in particular the effects of fiscal policy on sectoral output growth in Nigeria.

In Nigeria, studies by Ekpo (1994); Omitogun and Ayinla (2007); Ogunmuyiwa (2008); Nurudeen and Usman (2010); Ogunmuyiwa (2011); Oseni and Onakoya (2012); among other studies, who had investigated the relationship between fiscal policy and real output growth, only concentrated on the aggregate output growth neglecting sector-specific analysis. The neglect of these important issues in the existing literature created an empirical gap for wish research can be carried out and indeed might have undermined the policy relevance of inferences from the empirical evidence from such studies especially on Nigeria. This study therefore intends to examine the empirical relationship between fiscal policy and sectoral output in Nigeria. Thus, this study covers all the activity sectors in Nigeria since these sectors serve as the main engine for growth in any developing countries particularly in Nigeria for the periods of 1981 to 2011.

An understanding of these relationships is expected to provide the working tools for policy makers to design programme that can contribute to actualization of sustainable development in Nigeria.

Therefore the aim of the paper is to examine the relative effects of fiscal policy in stimulating the sectoral output growth in Nigeria.

The specific objectives therefore include to:

i. Determine the differential effects of fiscal spending on sectoral output growth in Nigeria;
ii. Establish the sectors where fiscal policy is most effective in Nigeria.

2. Literature Review

A countless of studies have examined the relationship between fiscal policy and growth in developed, developing and emerging economies of the world. However, one of the pioneer studies of fiscal policy and growth can be traced to the work of Kneller et al (1999) argued that the biases related to the incomplete specification of the government budget constraint present in previous studies are significant and after taking them into account, they found for a panel of 22 OECD countries for 1970 - 1995 that distortionary taxation hampers growth, while non-distortionary taxes do not; the study further revealed that productive government expenditure increases growth, while non-productive expenditure does not.

Adenikinju and Olofin (2000) focus on the role of economic policy in the growth performance of the manufacturing sectors in African countries. They utilize panel data for seventeen African countries over the period 1976 to 1993. Their econometric evidence indicates that government policies aimed at encouraging foreign direct investment, enhancing the external competitiveness of the economy, and maintaining macroeconomic balance have significant effects on manufacturing growth performance in Africa.

Phillips (1997) critically analyses the Nigerian fiscal policy between 1960 and 1997 with a view to suggesting workable ways for the effective implementation of Vision 2010. He observes that budget deficits have been an abiding feature in Nigeria for decades. He notes that expect for the period 1971 to 1974, and 1979, there has been an overall deficit in the federal Government budgets each year since 1960 to date. The chronic budget deficits and their financing largely by borrowing, he asserts, have resulted in excessive money supply, worsened inflationary pressures, and complicated macroeconomic instability, resulting in negative impact on external balance, investment, employment and growth. He, however, contends that fiscal

policy will be an effective tool for moving Nigeria towards the desired state in 2010 only if it is substantially cured of the chronic budget deficit syndrome it has suffered for decades.

Peter and Simeon (2011) investigated the impact of fiscal policy variables on Nigeria's economic growth between 1970 and 2009. The study employed Vector Auto Regression (VAR) and error correction mechanism techniques. The study revealed that there exist a long-run equilibrium relationship between economic growth and fiscal policy variables in Nigeria. Consequently, it was recommended that government should formulate and implement viable fiscal policy options that will stabilize the economy. This could be achieved through the practice of true fiscal federalism and the decentralization of the various levels of government in Nigeria.

Onuorah and Akujuobi (2012) examined the trend and empirical analysis of public expenditure and its impact on the economic growth in Nigeria. The study employed Johansen Co-integration and VEC and found that RGPE established long run relationship with RGDP. Finally, there is no statistical significance between public expenditure variables and the economic growth in Nigeria. The study recommended that government should embark on realistic policy implementation with sincere fiscal and monetary policies in place that can monitor to greater extend and help in the sustainability for remarkable growth to be recorded in the Nigeria.

Ogbole et al (2011) examined the impact of fiscal policy on economic growth in Nigeria during regulation and deregulation periods. Results obtained showed that there is a difference in the effectiveness of fiscal policy in stimulating economic growth during and after regulation periods. The impact was marginally higher (only N140 million or 14% contribution to GDP) during deregulation, than in the regulation period. The study recommended appropriate policy mix, prudent public spending, setting of achievable fiscal policy targets and diversification of the nation's economic base, among others.

Sikiru and Umaru (2012) investigated the impact of fiscal policy on economic growth in Nigeria. Annual data covering 1977 – 2009 were utilized. Unit roots of the series were examined using the Augmented Dickey-Fuller technique after which the cointegration test was conducted using the Engle-Granger Approach. Error-correction models were estimated to take care of short-run dynamics. The study found that productive expenditure positively impacted on economic growth during the period of coverage and a long-run relationship exists between them as confirmed by the cointegration test and recommended the improvement in government expenditure on health, education and economic services, as components of productive expenditure, to boost economic growth.

Bogunjoko (2004) examines the growth performance in Nigeria. He adopted a linear equation of the production function as suggested by Ram (1989) and adopted by Aigbokhan (1996). In order to complement the single equation model and account for the interdependency of expenditure and growth in Nigeria, a vector autoregressive model of three variables namely real output, federal government expenditure and state government expenditure was employed. Based on the Ram – type production function, the empirical results show that while the externality of the alternative expenditure (i.e. federal and state) is positive, the overall impact of the expenditure is growth retarding. This finding complements the argument that federal and state expenditures are made without due reference to the absorptive capacity of the economy. His VAR model shows that, inter – temporally, the response of real output to state and federal expenditures is weak in the short run. Aigbokhan (1996) opined that federal government spending if employed efficiently could boost private investment and promote economic growth. Ekpo (1994) contended that the role of the public sector should be limited to the continuous creation of an enabling environment to allow and enhance private sector – induced development. Ogiogio (1996), however, notes that the economy does not have the productive capacity to support growth in the absence of new (government) investment. In particular, it was agreed that government expenditure was necessary for the maintenance of existing infrastructure and the implementation of policies / projects in the economic and social sectors of the economy.

Vincent et al (2012) investigated the relationship between fiscal deficits and economic growth. Although macroeconomic theory postulates that fiscal deficits stimulate economic growth, empirical research has been less conclusive about this relationship and adopted a modeling technique that incorporates cointegration and structural analysis. The results indicated that fiscal deficit affects economic growth negatively and there is a strong negative association between government consumption expenditure and economic growth.

In summary, all the empirical studies reviewed focused on either the relationship between fiscal policy or fiscal policy variables and growth. None of these studies focuses on the effect of fiscal policy on sectoral output in Nigeria. This study intends to fill this vacuum.

3. Methodology

This study employed annual secondary time-series data on fiscal policy variables that was sourced from 2013 Central Bank statistical bulletin. The data covered the period 1970 to 2013 focusing on federal government expenditure, Agriculture, Mining, Manufacturing, Building and Construction, Wholesale and Retail Trade, and Services sector output.

Autoregressive Distributed Lag (ARDL) model bound testing approach was adopted to carry out co-integration among variable of interest.

Specification of the Model

Based on the theoretical framework and the intuition from the empirical literature reviewed earlier, fiscal policy can

influence sectoral output, which can equally impact on the long-term economic growth (Akanni and Osinowo, 2013; Ariyo 1993). The possible effect of fiscal policy will then depend on model specification.

Therefore, to specify the sector output growth equation starting with the popular simple linear equation function, we have;

$$Y = f(X) \quad (1)$$

Where: Y = Sector Output

X = Total Government Fiscal expenditure (TEXP)

We start by assuming that the variables are related with simplex possible mathematical form, which is the relationship between sectoral output and total government fiscal expenditure is linear of the form

$$Y_t^i = \beta_0 + \beta_1 TEXP_t \quad (2)$$

Where $\beta > 0$

Rodrik (1998) noted that the real output is inversely related to trade openness ($TROPEN_t$) as a source of macroeconomic fluctuation. It was noted that inflation ($INFLR_t$) is an important explanatory variable of real output fluctuation. In addition, population (POP_t) is an important demographic variable in economic fluctuation model (Bejan, 2006). Saibu and Nwosa (2011) stressed the importance of interest rate ($INTR_t$) as an instrument used by monetary authority for economic management. Also the effect of political instability ($POLSTAB_t$) on real output fluctuation is examined using dummy variable in which military regime was assigned 1 and democratic regime takes 0.

This idea takes after the work of De Haan and Sturm (1994) and as adopted by Foye (2008). Based on the above discussion, we express equation (2) in more explicit forms and accommodating other relevant variables in the model, therefore equation (2) can be re-expressed as a simple linear equation model as summarized below;

$$Yti = \beta0 + \beta1TEXPt + \beta2TROPENt + \beta3INFLRt + \beta4INTRt + \beta5POPt + \beta6LABOUR + + \beta7POLSTABt + ut \quad (3)$$

Where Y represents the sectoral output viz: AGR, MIN, MAN, BCN, WRT and SER, TEXPt is the total fiscal expenditure and other denotations are as defined earlier. In capturing the effect of fiscal policy on aggregate output: Y will represent the real GDP.

Equation (3) is the baseline model for the analysis of the effects of fiscal policy on each of the sector outputs. The Nigerian economy was classified into six broad sectors namely: agriculture (AGR), mining (MIN), manufacturing (MAN), building and construction (BCN), wholesale and retail trade (WRT) and the service sector (SER).

In keeping with the Autoregressive Distributed Lag (ARDL) model approach to co-integration analysis and the error correction mechanism proposed for this study, equation (3) was written as:

$$\Delta Yi = \alpha0 + \sum pi=1 \partial I\, \Delta Yt\text{-}1 + \sum pi=1 \gamma i \Delta TEXPt\text{-}1 + \sum pi=1 \Theta i \Delta LTROPENt\text{-}1 + \sum pi=1 \psi i\, \Delta LINFLRt\text{-}1 + \sum pi=1 \varphi i \Delta LINTRt\text{-}1 + \sum pi=1 \omega i \Delta LPOPt\text{-}1 + \sum pi=1 \varphi i \Delta LABOURt\text{-}1 + \sum pi=1 \mu i \Delta LPOLSTABt\text{-}1 + \lambda1Yt\text{-}1 + \lambda2TEXPt\text{-}1 + \lambda3LTROPENt\text{-}1 + \lambda4LINFLRt\text{-}1 + \lambda5LINTRt\text{-}1 + \lambda6LPOPt\text{-}1 + \lambda7LLABOURt\text{-}1 + \lambda8LPOLSTABt\text{-}1 + Ut \quad (4)$$

Where $\boldsymbol{\alpha_0}$ is the drift component; $\mathbf{U_t}$ is the white noise; the terms with summation ($\sum^{\mathbf{p}}_{\mathbf{i}}$) signs represents the error correction dynamics while the second part of the equation with $\boldsymbol{\lambda_i}$ correspond to the long run relationship. In order to estimate the short-run relationship between the variables, the corresponding error correction equation was estimated;

$$\Delta Y^i = \alpha_0 + \sum^p_{i=1} \partial_1 \Delta Y_{t-1} + \sum^p_{i=1} \gamma_i \Delta LTEXP_{t-1} + \sum^p_{i=1} \Theta_i \Delta LTROPEN_{t-1} + \sum^p_{i=1} \psi_i\, \Delta LINFLR_{t-1} + \sum^p_{i=1} \varphi_i \Delta LINTR_{t-1} + \sum^p_{i=1} \omega_i \Delta LPOP_{t-1} + \sum^p_{i=1} \mu_i \Delta LPOLSTAB_{t-1} + \omega ECM_{t-1} + U_t \ldots\ldots \quad (5)$$

The ECM_{t-1} is the error correction model.

4. Empirical Results and Discussion

4.1. Unit Root Tests of Stationary of Variables

All the variables in the model are subjected to stationary test using Augmented Dickey Fuller (ADF) Unit Root Tests. The results of these tests are reported in Table 1. Some variables are stationary at levels, while others at their first difference, this implied that the variables could not be appropriately included in their levels in least square regression. Thus, the appropriate modeling techniques for sector output would be Autoregressive Distributed Lag (ARDL) model bound testing approach.

Table 1. Unit Root Tests of Stationarity of Variables

Variables	ADF*(1 lag)		Order of Integration
	Level	First Difference	
LRGDPt	-2.885577	-4.515696*	I(1)
LAGRt	-2.145803	-4.934572*	I(1)
LMINt	-3.586029**	-3.557967	I(0)
LMANt	-3.100308**	-4.212591	I(0)
LBCNt	-3.304369**	-3.596566	I(0)
LWRTt	-3.244323**	-4.365799	I(0)
LSERt	-2.385452	-4.726302*	I(1)
LTEXPt	0.757783	-4.160137*	I(1)
LTROPENt	-0.838548	-6.474145*	I(1)
LINFLRt	-4.591987*	-6.408007	I(0)
LINTRt	-1.694402	-6.989123*	I(1)
LPOPt	-3.130243**	-1.817723	I(0)
LLABOURt	-1.833302	-4.383689*	I(1)
LPOLSTABt	-1.715750	-4.179979*	I(1)
MacKinnon critical values for rejection of unit root hypothesis			
1% critical value	-3.6117	-3.6171	
5% critical value	-2.9399	-2.9422	

NB :*(**) denotes statistical significance at 1% and 5% level respectively.
Source: Computed by the Author (2015)

4.2. Tests for Co-integration

For any meaningful long-run relationship to exist between non-stationary series, it is important that some linear combination of the series must be co-integrated. The most popular and widely used methods in recent past were Johansen (1988) and Engle and Granger (1987) co-integration test. However, as noted by Aziakpono and Babatope (2003), a crucial condition for the application of these methods is that the variables must be of the same order of integration. They further argued that the Engle-Granger co-integrating test is inappropriate for testing the co-integration among variable of this nature; because the Engle-Granger approach is based on the assumption that there exist only one co-integrating vector that connect the variables. Since our models are multivariate, there is possibility of having more than one co-integration vector. Thus, in such case where there is more than one co-integrating vector and the variables are not of the same order, the Engle-Granger methodology and Johansen co-integration test are no longer efficient and produce inconsistent estimates.

Therefore there is possibility that the previous studies like Omitogun and Ayinla (2007), Adefeso and Mobolaji (2010) and Adebiyi (2006) might have failed to acknowledge this deficient in their results. The implication is that the outcome of their results suffered from statistical deficient if in fact the order of integration among the variables is not the same. To overcome such challenge, the co-integration among the variables is examined through ARDL methodology. The superiority of the ARDL co-integration approach above others is that, the ARDL combined variables irrespective of their order of integration or stationarity level. The table 2 below presents the estimates of the ARDL co-integration tests.

Table 2. F-Statistics for Testing the Existence of Co-integration

Sectors	F-Statistics
AGR	25.304
BCN	14.787
MAN	53.871
MIN	65.945
SER	19.802
WRT	25.889
Critical Value:	
1%	3.457 - 4.943
2%	2.627 – 3.386
3%	2.236 - 3.381

4.3. Effect of Total Fiscal Expenditure on Sector Output

The empirical results generated from the long run analysis as presented in table 3 below clearly established that the aggregate results would definitely misguide policy inferences as the results showed that total fiscal expenditure were not statistically significant across all sectors.

Table 3. Effect of Total Fiscal Expenditure on Sector Output in the Long Run

Fiscal Variables	GDP	AGR	BCN	MAN	MIN	SER	WRT
LTEXP	0.48497 (0.15818) (0.30660)	-0.368891 0.61761 (-0.59729)	0.005566 (0.38122) (0.01460)	0.076333 (0.28942) (0.26375)	0.282284 (0.19932) (1.41621)	0.075633 (0.23815) (0.31758)	0.30939 (0.17931) (0.17255)
LTROPEN	0.382376 (0.37914) (1.00854)	0.600986 (0.40919) (1.46874)	1.213147 (0.98304) (1.23407)	0.993976 (0.58164) (1.70891)	0.750766 (1.96815) (0.38146)	0.245926 (0.15085) (1.64040)	0.540801 (0.45969) (1.17646)
LINFLR	0.488547 (0.44392) (1.0052)	0.31858 (0.54295) (0.24285)	0.279093 (0.86169) (0.32389)	0.017890 (0.58164) (1.70891)	0.596361 (0.31693) (1.88168)	0.909874 (0.63289) (1.43765)	0.204350 (0.49299) (0.41451)
LINT	-0.112038 (0.11484) (-0.97559)	-0.154593 (0.12151) (-1.27224)	-0.328865 (0.28249) (-1.27224)	0.344229 (0.18530) (-1.85764)	0.271860 (0.08800) (3.08921)	-0.218691) (0.14159) (-1.54452)	-0.112973 (0.15483) (-0.72964)
LPOP	0.003354 (0.00084) (3.97163)	0.003108 (0.00085) (3.71832)	0.004360 (0.00194) (2.24836)	0.004650 (0.00094) (4.95577)	-0.00213 (0.0049) (-0.43231)	0.002600 (0.15084) (1.63040)	0.002578 (0.00101) (2.54789)
LLABOUR	-0.112038 (0.11484) (-0.97559)	0.001411 (0.00219) (0.64376)	-0.001083 (0.00463) (-0.23402)	-0.001428 (0.00321) (-0.44472)	0.000252 (0.00135) (0.18633)	0.000276 (0.00231) (0.11970)	-0.000180 (0.00223) (-0.08049)
LPOLSTAB	0.101880 (0.11989) (0.85020)	-0..046359 (0.12824) (-0.36150)	0.044731 (0.26941) (0.16604)	-0.100948 (0.18307) (-0.55143)	-0.056262 (0.06545) (-0.85966)	0.245926 (0.15085) (1.63040)	-0.013143 (0.13380) (-0.09823)

NB: The values above the parenthesis are the regression coefficient while the values of the first and second parenthesis are standard error and t-statistic value of the estimate respectively.

Table 4. The Parsimonious Model for Sectoral Output Growth

First Panel: Agriculture Sector Output			
Variables	Coefficient	Std Error	T-Statistic
$ECM_{(t-1)}$	-0.826555	0.34007	-2.43053
Constant	1.207727	1.34606	0.89723
LTEXP (-2))	-0.636390	0.40389	-1.97567
LTROPEN (-2))	0.066425	0.08149	0.81517
LINFLR (-1))	-0.278226	0.16178	-1.73437
LINTR (-2))	0.951921	0.29924	3.18110
LPOP (-1))	48.92984	53.4905	0.91474
LLABOUR (-1))	34.50245	22.6674	1.52212
LPOLSTAB (-1)	-0.844361	0.61999	-1.36190
Second Panel: Mining Sector			
Variables	Coefficient	Std Error	T-Statistic
$ECM_{(t-1)}$	-0.70074	0.09337	-7.50539
Constant	-0.609433	0.69761	-0.87361
LTEXP (-2))	0.206828	0.11848	1.74573
LTROPEN (-2))	-0.052802	0.07352	-0.71816
LINFLR (-1))	-0.90476	0.08329	-1.08629
LINTR (-1))	1.417390	0.19657	7.21077
LPOP (-1))	-22.38082	29.8152	-0.75065
LLABOUR (-1))	39.12080	13.1201	2.98174
LPOLSTAB (-1)	0.469583	0.22768	2.06247
Third Panel: Building and Construction Sector			
Variables	Coefficient	Std Error	T-Statistic
$ECM_{(t-1)}$	-0.627580	0.17379	-3.61109
Constant	0.175211	0.76398	0.22934
LTEXP (-1)	1.201862	0.72161	1.96533
LTROPEN (-1)	-0.100875	0.0554	-1.69415
LINFLR (-2))	-0.015544	0.09113	-0.17058
LINTR (-1))	0.843423	0.19605	4.30206
LPOP (-2))	51.23158	32.3427	1.58402
LLABOUR (-1))	23.32135	15.8183	1.47433
LPOLSTAB (-2)	0.196901	0.46129	0.42685
Fourth Panel: Manufacturing Sector			
Variables	Coefficient	Std Error	T-Statistic
$ECM_{(t-1)}$	-0.492676	0.20718	-2.37798
Constant	-0.609433	0.69761	-0.87361
LTEXP (-2)	1.081283	0.15479	6.98556
LTROPEN (-1))	0.186875	0.11175	1.67222
LINFLR (-2))	0.252737	0.09792	-2.58100
LINTR (-1))	1.378476	0.32332	4.26357
LPOP (-1))	87.14802	44.7908	1.94567
LLABOUR (-2))	24.57336	11.8327	2.07673
LPOLSTAB (-1)	0.165483	0.44461	0.37220
Fifth Panel: Wholesale and Retail Sector			
Variables	Coefficient	Std Error	T-Statistic
$ECM_{(t-1)}$	-0.674838	0.14580	-4.62845
Constant	0.349336	0.97573	0.35802
LTEXP (-1)	0.292831	0.30639	0.95574
LTROPEN (-2))	0.084302	0.07049	1.19594
LINFLR (-2))	-0.076392	0.10283	-0.94624
LINTR (-2))	1.072004	0.21776	4.92296
LPOP (-1))	22.27576	36.7537	0.60608
LLABOUR (-2))	45.83592	17.9827	2.54889
LPOLSTAB (-1)	0.058467	0.43364	0.13483
Sixth Panel: Service Sector			
Variables	Coefficient	Std Error	T-Statistic

$ECM_{(t-1)}$	-0.604866	0.19408	-3.11659
Constant	0.763409	0.77464	0.98550
LTEXP (-1)	0.013726	0.24498	0.05603
LTROPEN (-1))	0.118211	0.09998	1.18238
LINFLR (-1))	-0.041735	0.07713	-0.54108
LINTR (-1))	0.949760	0.24131	3.93589
LPOP (-1))	-2.282565	30.0792	-0.07589
LLABOUR (-2))	22.36230	10.8343	2.06403
LPOLSTAB (-1)	-0.123091	0.39623	-0.31065

Source: Computed by the Author (2015)

Table 5. Summary of the Empirical Findings

Long Run Analysis						
Variables	AGR	BCN	MAN	MIN	SER	WRT
Total Expenditure	(-) √	(+) √	(+) √	(+) √	(+) √	(+) √
Trade Openness	(+) √	(+) √	(+) *	(+) √	(+) *	(+) *
Inflation Rate	(+)√	(+) √	(+) √	(+) *	(+) √	(+) √
Interest Rate	(-) √	(-) √	(+) *	(+) *	(-) √	(-) √
Population	(+) *	(+) *	(+) *	(-) √	(+) *	(+) *
Labour	(-) √	(+) √	(+) √	(-) √	(+) √	(-) √
Political Stability	(-) √	(-) √	(+) √	(-) √	(+) *	(-) √
Short Run Analysis						
Variables	AGR	BCN	MAN	MIN	SER	WRT
Total Expenditure	(-) *	(+) *	(+) *	(+) *	(+) *	(+) √
Trade Openness	(+) √	(-) *	(+) *	(-) √	(+) *	(+) √
Inflation Rate	(-) *	(-) √	(+) *	(-) √	(-) √	(-) √
Interest Rate	(+) *	(+) *	(+) *	(-) *	(+) *	(+) *
Population	(+)√	(-) √	(+) *	(-) √	(-) √	(+) √
Labour	(-)√	(-) √	(+) *	(+) *	(+) *	(+) *
Political Stability	(-) √	(-) √	(+) √	(+) *	(-) √	(+) √
	AGR	BCN	MAN	MIN	SER	WRT
R-Squared	0.811072	0.877978	0.815777	0.912041	0.784151	0.890353
F-Statistic	3.066441	4.578770	2.817944	10.36899	3.632870	5.167409
Akaike AIC	0.444251	-0.568537	-0.176614	-0.507913	-0.191549	-0.137765
Schwarz SC	1.402094	0.432845	0.824768	0.319315	0.635679	0.863617

Note: The cell with (+) and (-) indicated those variables that have positive and negative relationship with the sectors while the symbol of and √ implies significant and non-significant variable respectively

4.4. Error Correction Model

The essence of this is to capture the effect of short run movement in the empirical models. It involves moving from over parameterization modeling to parsimonious model. The error correction coefficients of the models shown on table 4 below have the expected negative signs. Therefore, there is a significant feedback effect ranging from about 80% to 140% across the six sectoral models. This implied that there is long run stability of the output growth after the initial shock due to short run fluctuation. Thus confirming the adequacy and statistically efficiency of the models. Taking a descriptive examination of the parsimonious model from the table 4 above, R-Squared value ranges from 0.811072 to 0.912041 across all the sectors and this measure the goodness of fit of the model. This implies that 81% to 91% of variation in the sector output is explained by the independent variables

The findings of this research revealed that interest rate is the most influential variable that determines the magnitude of sector output, it has negative relationship and significant effect across all sectors. This indicate that higher interest rate decrease the output performance of the sectors. Total fiscal expenditure which ranked second, is also significant in four sectors (Agriculture, Building and Construction, manufacturing and mining), Total fiscal expenditure has positive coefficient across all sectors except that of Agriculture. The negative coefficient of agriculture sector might be due to share of government budget allocation to Agriculture sector in Nigerian economy, which is dismally low. CBN (2009) revealed that the study period of (1978-2008), the average share of government agricultural spending in the total government fiscal expenditure in the economy was 3.11%. This was corroborated by recent findings of Oseni (2013), which concluded that there is need to increase allocations towards the development of agriculture sector

In terms of sector output response, the manufacturing sector was more sensitive and responds to all the independent variables with statistic significant. The coefficient of inflation rate has a negatively impact on all the sectors with an exception of manufacturing sector. The table 5 below summarized the empirical estimates and findings of this study.

5. Conclusion and Policy Recommendation

This paper has examined the effect of fiscal policy on sector output in Nigeria and the findings of the study showed that, to a considerable extent, different fiscal policy variable influence the output of the sector differently. Overall, the study found that total fiscal expenditure had positive relationship with most of the sectors output of the economy, this confirmed earlier results by Oseni (2013), and Adeoye (2006). Furthermore, the findings of the study showed that inflation is a major clog to the output growth of the various sectors. Thus, there is need for the monetary authority to maintain low and steady inflation rate that would enhance investment in the various sectors of the Nigeria economy.

However to ensure a continuous and better growth in Nigeria economy, there is need to increase allocation towards the development of all the economy sectors, most especially agriculture sector that received less than 5% of the total budget. Also, in order to improve the performance of the sectors, government must put an end to the unproductive and wasteful spending. In addition, to ensure that all the main objectives of fiscal policy and other target are achieved, there is need to redirect public expenditures towards making Nigeria a producer nation. This ought to be the central focus of fiscal objective.

Finally, improving fiscal policy efficiency on sectors' output will require further regulatory reforms and strengthening of fiscal policy implementation. The study concluded that the existence of disparity in the sectoral response to fiscal policy variables underscored the difficulty of conducting uniform and economic wide fiscal policy in Nigeria. Therefore, the best policy approach is to adopt sector specific policy based on their relative strength and significance in each sector of the economy within the overall fiscal policy mechanism framework.

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