International Journal of Operational Research in Management, Social Sciences & Education | IJORMSSE
p-ISSN: 2536-6521 | e-ISSN: 2536-653X
Volume 10 Number 2 November, 2024

Fiscal Policy and Manufacturing Sector Performance in Nigeria

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Article DOI: 10.48028/iiprds/ijormsse.v10.i2.19

Abstract

The examined the impact of fiscal policy on manufacturing sector growth in Nigeria from 1985-2022. The study used government expenditure on manufacturing sector using grants from bank of industry (BOI), government tax revenue on manufacturing sector as indicators of fiscal policy while manufacturing sector performance was measured by manufacturing sector share of output. The research utilized time series data obtained from the central bank of Nigeria (CBN) statistical bulletin, the world development indicators (WDI) of the world bank and Bank of industry (BOI). The data analysis method utilized ADF unit root testing, ARDL bound co-integration. The outcome of ADF unit root testing indicated the presence of a combination of integrated of order zero (O), integrated of order one (1). The ARD'L bound co-integration revealed the presence of a long-term link among manufacturing sector output, grants from bank of industry, as government expenditure and government tax revenue. All these contribute slowly in Nigeria. The study concluded that government expenditure should be improved upon. The study suggests that the government should prioritize grants from bank of industry in order to enhance its performance.

Keywords*: Government Expenditure, Manufacturing, Fiscal policy, Output*

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Background to the Study

For a growing economy like Nigeria, industries are crucial because of the marginal revenue product of labour. Industry is actually grouped into primary and tertiary production. Primary production has to do with the mining and extraction of mineral deposit while tertiary production consists of manufacturing which is the conversion and transformation of raw materials or primary products into finished goods, consumable or tertiary product (Korgbeelo & Deekor 2021). The manufacturing sector plays a significant role in every successful economy which is attributed to the large output in an open economy (Ayeyem; 2013). The manufacturing sector consists of production of goods using labour, machinery, tools and biochemical process by the transformation of raw materials into finished product in a large scale. It contributes significantly in industrial activities, economic growth, employment generation, productivity and technological advancement for the overall development and growth of nation. Nwogo and Orji (2019) noted that the manufacturing sector of an economy is often regarded as the engine of growth and economic development due to its pivoted role in broadening the productive base of the economy, enhancing its revenue earnings, reducing the rate of unemployment and poverty well as reducing rural –to –urban migration thereby increasing the foreign earnings of the country due to huge revenue generation (receipts) from goods exported abroad, which obviously opens up the economy for growth and industrial development (Okuneye, 2019). Hence, one of the regulatory policies used by the government in achieving its goal for economic development is fiscal policy.

Gbanador (2007) defines fiscal policy as a deliberate action undertaken by the government to achieve its economic objectives using the fiscal instruments of taxation, government spending and the budget deficit. Bakare- Aremu and Osobase (2022) asserted that fiscal policy was a significant effect on manufacturing sector performance using government fiscal policy and its monetary policy measures. The manufacturing sector has been receiving loan/grants payment to boost manufacturing sector output and stimulate growth by the bank of industry (BOI), and other tax incentives as fiscal policy measures.

Statement of the Problem

Numerous fiscal policies have been put in place to enhance the manufacturing sector in Nigeria using tax incentives, subsidies, regulatory reforms, grant and logistics from bank of industry. However, despite the various fiscal policy measures, manufacturing sector still face a lot of challenges which affect the performance of the sector and the economy as a whole. These comprise of high import content of industrial imputes, inadequate capacity utilization, low capital base, narrow market, poor funding and poor advocacy by its umbrella body: manufactures Association of Nigeria (MAN).

Aim and Objectives of The Study

The study examines the effect of fiscal policy on manufacturing sector performance in Nigeria from 1985-2022 specifically, the aim is to:

i. Examine the effect of government expenditure on manufacturing sector output in Nigeria.

ii. Analyse the effect of government tax revenue
iii. Evaluate the contributions of bank of industry (BOI) inform of manufacturing sector grant.

Research Questions

Based on the specific objectives stated above the following research questions are postulated to guide this research work;

i. What is the effect of government expenditure on manufacturing sector output in Nigeria
ii. To what extent does government tax revenue affect manufacturing sector output I n Nigeria?
iii. How does manufacturing sector grants affect manufacturing sector output in Nigeria?

Literature Review

Conceptual Review

Some academics have proposed the following definition of fiscal policy and manufacturing sector "as a deliberate attempt by any government to formulate decisions on how to raise government revenue through taxation, incentives, subsidies in the production of finished goods and services. (Onuchukwu, Ofoezie and Nteegah asserted that a way to view government fiscal activities is to look at the public budget. Ekine (2013) stated that fiscal policy is concerned with the action of the government to spend money or to collect money in taxes.

Theoretical literature

The Theory of Savers-spenders

Mankiw (2000) and Matsen, Sveen, Torvik (2008) proposed and used the concept. The theory postulated that the higher take –home pay that spenders receive will be offset by higher tax payment or by lower tax refunds. This implies that consumers should save the extra take –home pay to meet the upward tax liability. Secondly the extra consumption reduces investment which in turn raises marginal product of capital as well as decreases the economic growth level. In addition, the tax will fall on the severs and tax will fall on both the sever and spenders but the interest will only for on savers.

Keynesian Theory of output and income Keynes (1936) made a claim. He concluded that in order to correct lingering unemployment and depression in an economy, government should use taxation and government expenditure to promotion output, growth and employment.

Empirical literature Review

The outcome of fiscal policy on government stabilization policies on the Nigerian industrial sector performance was studied by Emmanuel (2022) from 1986 to 2021, the research was concluded using the ARDL bound testing approach –to examine the data gathered for the study. It revealed that government stabilization policies are major

determinants on the industrial sector output in Nigeria for short and long run effect. Olakemi and Tayelolu (2021) examined the outcome of fiscal policy and economic growth in Nigeria from 1970 to 2018. The authors use Augmented Dickey Fuller (ADF) unit root test to examine the relationship between GDP and government expenditure, government debt stock. Their findings show that positive relationship exist while negative relationship exhibited in government tax revenue.

Onyema and Ifeanyichukwu (2019) examine the relationship between fiscal policy and economic growth in Nigeria from 1981 to 2017. However, their findings revealed that three of the six proxy's fiscal policy, namely; government expenditure on economic social services and tax have a positive and significant relationship with gross domestic product while government expenditure on administration and fiscal deficit have a negative relationship with economic growth in Nigeria. Ogar, Arikpo and Suleiman (2019) anlysed the link between fiscal policy on macroeconomic policy dynamics in Nigeria from 1980 to 2016. The research found that there is no long run and short run causality from fiscal policy instruments such as government revenue, government expenditure and debt to interest rate in Nigeria using vector error correlation mechanism (VECM) for data analysis.

Aliyum, Ndagwakwa, Zirra, Salam and Mohammed (2019) examined the impact of fiscal policy on economic performance in Nigeria from 1981-2016. The outcome revealed that fiscal policy was partially effective on economic growth (surrogate of economic performance) in Nigeria using ADF test, cointegration test and error correction model estimation.

Olukayode and Olarunfemi (2018), looked at the impact of fiscal policy instrument on employment generation in Nigeria from 1980 to 2015. The outcome revealed that government spending and manufacturing turning output had negative impact on unemployment rate in Nigeria using the ADF test, Engel Granger cointegration test for long- run relationship and ordinary least square for long run estimates.

Methodology

Data Collection/Variables

This study utilized secondary data sourced from the statistical bulletin of the central bank of Nigeria (CBN) and the world Bank development indicators. The variables in question comprises of government tax revenue, manufacturing sector grant, government expenditure on manufacturing sector grant, government expenditure on manufacturing sector as proxies for fiscal policy while manufacturing sector output serves as proxy for the performance of the manufacturing sector in Nigeria spanning the years 1985 to 2022

Model Specification

The model specification is owing to John Maynard Keyne (1936) 's theory of output and income which posits that in order to correct lingering unemployment and depression in an economy government should use taxation and government expenditure to promotion

output, growth and employment. This model is derived from the modification of the models utilized by Aliyu (2019) to examine the expenditure of government towards manufacturing sector in Nigeria. Their model is described.

$MSO\text{-}B_0B_1GEX+BGTR+U_t$

The model was modified by introducing manufacturing sector grant from bank of industries (BOI). The model defined the endogenous variables, namely: A function of government expenditure on manufacturing sector, government tax revenue on manufacturing sector and manufacturing sector grants. The model is defined in the following manner:

MSO= f(GEX, GTR, MSG)

The mathematical model is represented symbolically as:
$MSO= B_0B_1 GEX +B_2GTR+B_3MSG$

The model provided undergoes translations into an econometric model by comprising the error factor in the following manner:
$MSO = B_O+ B_1 GEX+G_2GTR+B_3MSG+t$

Description of variable in the model MSO= Manufacturing sector output.
GEX = Government expenditure on manufacturing
GTR = Government tax revenue on manufacturing
MSG = Manufacturing sector grants

Data Analysis and Discussion of Finding
The analytical process for this research started by presenting the descriptive statistics of each variable comprised in our model in the following ways:
Insert the tables.

Table 1: Time series Data on Research Variables (1985-2022)

YEAR	MSO ₦' Billion	GEX ₦' Billion	GTR ₦' Billion	MSG ₦' Billion
1985	3,453.72	13.0	15.1	5.86
1986	3,137.51	16.2	12.6	4.46
1987	3,680.71	22.0	25.4	15.18
1988	4,237.80	27.7	27.6	15.59
1989	3,568.69	41.0	53.9	28.98
1990	3,825.61	60.3	98.1	54.94
1991	4,165.39	66.6	101.0	60.77
1992	4,667.76	92.8	190.5	70.80
1993	3,850.41	191.2	192.8	88.48
1994	3,364.57	160.9	201.9	89.03
1995	2,898.47	248.8	460.0	95.43
1996	2,990.69	337.2	523.6	115.77
1997	3,051.91	428.2	582.8	120.83
1998	2,908.21	487.1	463.6	175.93
1999	2,975.62	947.7	949.2	194.48
2000	2,980.65	701.1	1,906.2	222.86
2001	3,050.51	1,018.0	2,231.6	233.97
2002	3,591.40	1,018.2	1,731.8	472.09
2003	3,203.24	1,226.0	2,575.1	343.94
2004	3,169.21	1,504.2	3,920.5	330.39
2005	3,242.20	1,919.7	5,547.5	523.25
2006	3,268.55	2,038.0	5,965.1	662.34
2007	3,271.65	2,450.9	5,727.5	554.88
2008	3,369.71	3,240.8	7,866.6	593.84
2009	3,491.29	3,453.0	4,844.6	733.16
2010	3,578.64	4,194.6	7,303.7	805.74
2011	4,216.19	4,712.1	11,116.8	618.33
2012	4,783.66	4,605.3	10,654.7	759.66
2013	5,826.36	5,185.3	9,759.8	931.05
2014	6,684.22	4,587.4	10,068.9	681.01
2015	6,586.62	4,988.9	6,912.5	442.58
2016	6,302.23	5,858.6	5,616.4	717.80
2017	6,288.90	6,456.7	7,444.8	894.07
2018	6,420.59	13,786.9	9,544.3	953.66
2019	6,469.83	15,535.5	9,819.8	995.26
2020	6,291.59	17,557.4	8,569.2	906.79
2021	6,502.26	19,965.0	10,343.0	912.08
2022	6,661.39	24,431.21	12,586.53	925.79

Source: WDI of World Bank and CBN Statistical Bulletin (2022)

KEY: MSO Manufacturing Sector Output: GEX Government Expenditure: GTR = Government
Tax Revenue: MSG Manufacturing Sector Grant from Bank of Industry BOl)

Pre-Estimation Tests
Unit Root Test
This unit root test was conducted to know whether the mean variance of the variables are constant overtime. The unit root test using Augmented Dicke" Fuller (ADF) test was adopted under the following hypothesis:
Ho: The variable has a unit root (non-stationarity).
Hi: The variable has no unit root (stationarity).

Decision Rule: Reject the null hypothesis (Ho) of a unit root if the A1)F test statistic is greater than the critical value in absolute terms. On the other hand, retain the null hypothesis (Ho) of a unit root if the ADF test statistic is less than the critical value in absolute terms.

The results of the Augmented Dickey Fuller (ADF) unit root test is provided in Table 2 below:

Table 2: Unit Root Test Result

	LOG(MSO)	LOG(GEX	LOG(GTR)	LOG(MSG
ADF test statistic	-5.030440	-8.176158	-6.187148	-3.910877
1% level	-3.626784	-3.626784	-3.626784	-3.632900
5% level	-2.945842	-2.945842	-2.945842	-2.948404
10% level	-2.611531	-2.611531	-2.611531	-2.612874
Prob.*	0.0002	0.0000	0.0000	0.0049
Decision	Stationary at 1st Difference	Stationary at 1st Difference	Stationary at 1st Difference	Stationary at Level
Order of Integration	1(1)	1(1)	1(1)	1(0)

Source: Researcher's Computation (2024)

From the Table 2 above, the result revealed that manufacturing sector grant from Bank of Industry (BOl) (MSG) was stationary at Levels since ADF test statistics for the variable is greater than the critical values in absolute terms. It shows that the null hypothesis of presence of unit root was rejected at level for the variable at levels. This further indicates that manufacturing sector grant from Bank of' industry (BOl) (MSG) is integrated of order zero. That is, 1(0). Contrarily, manufacturing sector output (MSO), government expenditure (GEX) and government tax revenue (GTR) were stationary at first difference' since ADF test statistics for the three variables are greater than the critical values in absolute terms. It shows that the null hypothesis of presence of unit root was rejected at first difference for these three variables at levels. This further indicates that ratio of manufacturing sector output (MSO), government expenditure (GEX) and government tax revenue (GTR) are immigrated of order one. That is, 1(1). Hence, since the variables are stationary at levels and at first difference, co-integration analysis is justified. We then proceed to conduct the long run relationship of the variables and their short-term speed of adjustment to equilibrium.

ARDL Bounds Cointegration Test

The cointegration test was carried out to test for the long run relationship between the variables.

This test was carried out using Autoregressive Distributed Lag (ARDL) bound approach. The hypothesis of the bounds cointegration test is stated as follows:

Ho: There is no cointegration (there is no long run relationship).

Hi: There is cointegration (there is long run relationship).

Decision Rule: Reject the null hypothesis (Ho) if the computed F-statistic is greater than upper bound critical value. On the other hand, retain the null hypothesis (Ho) if the computed F- statistic is less than upper bound critical value.

Table 3: ARDL Bond Test

Null Hypothesis: No Long-Run Relationships Exist				
Critical Value Bounds				
T-statistic	Value	Significance	I(0)	I(1)
F-statistic	5.769161	10%	2.37	3.2
K	3	5%	2.79	3.67
		1%	3.15	4.08

Source: Researcher's Computation (2024)

From the result of the Bounds cointegrate ion test in Table 3. since the computed F-statistic (5.769161) is greater than upper bound critical value (3.67) at 5% significant level, the null hypothesis (I-b) is therefore rejected. This implies that there is integration among the variables. Thus, there is sufficient statistical evidence to conclude that there exists a long run relationship or cointegration among manufacturing sector output it (MSO). government expenditure (GEX), government tax revenue (GTR) and manufacturing sector grant from Bank of Industry (BOl) (MSG) in Nigeria. After establishing the cointegration relationship, we therefore proceeded to estimate the long run coefficients by estimating an ARDL model.

Long Run Dynamics of ARDL

Table 4: Estimated Long-Run Coefficients of ARDL

Dependent Variable: LOG(MSO)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LOG(GEX)	4.408358	0.510365	8.637657	0.0000
LOG(GTR)	4.540990	1.064568	4.265571	0.0002
LOG(MSG)	1.455913	1.058898	1.374932	0.2345
C	0.048008	0.848086	0.056607	0.9996

Source: Researcher's Computation (2024)

Short Run Dynamics of ARDL

Table 5: Error Correction Estimates of the ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(MSG)	2.034245	0.543624	3.742007	0.0009
CointEq(-1)*	-0.007857	0.003777	-2.080032	0.0456
$R^2 = 0.705606$, Adj $R^2 = 0.625606$; DW = 2.255201				

Source: Researcher's Computation (2024)

The short-run result estimated in Table 5 indicated that there is a positive relationship between manufacturing sector grant from Bank of Industry (BOl) (MSG) and manufacturing sector output (MSO). This is because the coefficient of manufacturing sector grant from Bank of Industry (BOl) (MSG) is positive with 2.034245. This means that a unit increase government tax revenue (GTR) will lead to 2.034245 increase in manufacturing sector output (MSO) while a unit decrease in manufacturing sector grant from Bank of Industry (BOl) (MSG) will lead to 2.034.45 decrease in Manufacturing sector output (MSO). Also, the p-value (0.0009) of manufacturing sector grant from Bank of Industry (BOl) (MSG) which is less than 0.05 indicates that manufacturing sector grant from Bank of Industry (BOl) (MSG) is statistically significant and thus has significant effect on Manufacturing sector output (MSO). Thus, it can be concluded that manufacturing sector grant from Bank of Industry (BOl) (MSG) has a positive but significant effect on Manufacturing sector output (MSO) in the short run.

Lastly, it can be observed that both the short run and long run results yielded the same sign for the variables which signifies consistency in the effects of the independent variables (government expenditure. government tax revenue and manufacturing sector grant from Bank of Industry (BOl)) on the dependent variable (manufacturing sector output).

Post Estimation Tests

The post estimation tests conducted in this study and its results are presented below:

Table 6: Diagnostic Test Results

Test	Test Type	Test Statistic	Value	Probability
Normality Test	Jarque-Bera	Jarque-Bera	0.158809	0.923666
Serial Correlation LM Test	Breusch-Godfrey	F-statistic	0.623781	0.5427
Heteroscedasticity	Breusch-Pagan-Godfrey	F-statistic	2.418260	0.6059
Specification Test	Ramsey RESET	T-Statistic	0.159970	0.6919

Source: Researcher's Computation (2024)

The results of the diagnostic tests were shown in Table 6. Hove\ er, since none of the test are statistically significant, then we can accept the respective null hypothesis. Thus, our

regression result is free from serial correlation, heteroscedasticity, specification error, and the error terms are normally distributed. Specifically, the results showed that the regression residual is mortally distributed since the P-value (0.923666) is greater than 5 percent level of significance. Its other words, under the Jarque-Bera normality test, a probability value of 0.923666 was greater than the proposed level of significance and this suggests that the errors were normally distributed due to the upholding of the null hypothesis of normal distribution.

Additionally, the serial correlation of the residuals was tested using Breuch Godfrey test or Lagrange Multiplier (LM). This test was carried out to find out w whether the residuals are serially independent or not. However, the null hypothesis of no serial correlation was retained because the probability value of 0.5427 was greater than the 5 percent level of significance. This indicates that there was absence of serial correlation in our model. Also, the probability value of 0.6059 against the Ramsey Regression Equation Specification Error Test (RESET) test was greater than the proposed 5 percent le" el of significance. As a result, the null hypothesis that the model was correctly specified v as sustained. Therefore, there was no possibility of the model being specified incorrectly which may result in the omission of certain variables. Lastly, the result of the Heteroskedasticity test showed that there was no heteroscedasticity in our model. This is because the null hypothesis of homoscedasticity was retained. Precisely. a probability value of 0.6919 showed that the errors were homoscedasti' and independent of the explanatory variables. Hence, the model has a good fit and is adequate for any conclusion drawn from it.

Conclusion and Recommendations

This conclusion research has determined the effect of fiscal policy on manufacturing sector performance between 1985 to 2022. The research discovered that government expenditure, government tax revenue and manufacturing sector grant from bank of industry (BOI) have short and long rung significant effect manufacturing sector performance in Nigeria.

Recommendations

Owning to the study upshots and conclusion the following recommendations are made;

1. Government and policy makers should make effort to ensure that the disbursement of government expenditure to various subsectors in the manufacturing sector are well supervised.
2. Grants from bank of industry (BOI) to the manufacturing sector should be well utilized
3. Importation of finished goods should be reduced while local production encouraged
4. Government should create large and open market for its citizen
5. Government should improve on incentives the manufacturing sector in Nigeria.

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