



ROLE OF GOVERNMENT IN PROMOTING REAL SECTOR DEVELOPMENT IN SUB-SAHARAN AFRICA: THE NIGERIAN EXPERIENCE

Thankgod Mark and Vivian Ozah

Rivers State University, Port Harcourt, Nigeria

Cite this article:

Thankgod M., Vivian O. (2023), Role of Government in Promoting Real Sector Development in Sub-Saharan Africa: The Nigerian Experience. African Journal of Social Sciences and Humanities Research 6(3), 20-34. DOI: 10.52589/AJSSHR-Y4ESTVIU

Manuscript History

Received: 24 March 2023

Accepted: 11 May 2023

Published: 31 May 2023

Copyright © 2023 The Author(s).

This is an Open Access article distributed under the terms of Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), which permits anyone to share, use, reproduce and redistribute in any medium, provided the original author and source are credited.

ABSTRACT: *This paper investigated the role of government in promoting real sector development in sub-Saharan Africa with a focus on the Nigerian economy. The government's role was measured using fiscal and monetary policy variables such as total government expenditure, broad money supply and interest rate, while the ratio of manufacturing value added to GDP formed the basis for measuring real sector development. Time series data on the variables were sourced from the Central Bank of Nigeria Statistical Bulletin and analysed using econometrics tools of error correction mechanism (ECM) and Granger causality test. The unit root test results revealed that all the variables are first difference stationary. It was also found from the cointegration test that variables have a long-run relationship. It was found from the parsimonious ECM that broad money supply and rate of interest are statistically insignificant in influencing manufacturing output. The results further reveal that the second and third leg of the government expenditure ratio to GDP significantly impacts manufacturing output. 1 percent increase in the first leg of government expenditure increases manufacturing output by 5.962 percent. Similarly, with a percentage in the second lag of government expenditure, manufacturing output increases by 3.182 percent. Additionally, the pairwise Granger causality test results reveal that unidirectional causality flows from the ratio of government expenditure to manufacturing output. Overall, the results indicate that fiscal policy, especially government expenditure, can be relied upon in predicting changes in manufacturing output. Thus, it is recommended for proper monitoring of fiscal policy measures, especially public expenditures, to ensure they are accounted for holistically and effectively utilised in fostering real sector development.*

KEYWORDS: Manufacturing output, government expenditure, broad money supply, interest rate, ECM and Nigeria.



INTRODUCTION

Government has, in one way or the other, regulated and controlled the economy to maximise the citizens' welfare by ensuring that the resources are efficiently allocated and used. But this has yet to yield the desired results over the years, especially in the sub-Saharan African economies. Like any other developing country, the Nigerian government adopts three types of public policies to carry out the objective of income distribution and allocation of resources. These public policy tools include monetary policy, fiscal policy and income policy tools. In Nigeria, the government has always relied on monetary policy to achieve certain economic objectives in the economy; such macroeconomic objectives include; employment, economic growth and development, the balance of payment equilibrium and a relatively stable general price level. The reason for choosing a monetary policy is the fact that monetary policy has severe implications for both fiscal and income policy measures. Monetary policy refers to the combination of measures designed to regulate the value, supply and cost of money in an economy in accordance with the level of economic activities. It can be described as the art of controlling the direction and movement of monetary and credit facilities in pursuance of stable prices and economic growth in the economy (CBN 1992).

There is no consensus among economists as to whether government intervention through the use of monetary policy will bring about economic stabilisation. This disagreement divided the economy into different schools of thought. They are the classical school, the Keynesian school, and the monetarist school. Each of them has its view on how variation in monetary aggregates could affect economic stabilisation. Fiscal policy is how a government adjusts its level of spending to monitor and influence a nation's economy. It is used along with the monetary policy, which the central bank uses to influence the money supply in a nation. These two policies are used to achieve macroeconomic goals in a nation. These goals include price stability, full employment, reduction of poverty levels, high and sustainable economic growth, a favourable balance of payment, and reduction in a nation's debt.

Nigeria's potential for growth and poverty reduction is yet to be realised. A key constraint has been the recent conduct of macroeconomics, particularly fiscal and monetary policies. This has led to rising inflation and a decline in real incomes. National economic management became a Herculean task as the economy has to contend with the volatility of revenue and expenditure. The widespread lack of fiscal discipline was further exacerbated by poor fiscal policy coordination among the three government tiers. Also, a weak revenue base arises from a high-marginal tax rate with a narrow tax base, resulting in low tax compliance.

As a result of these and other factors, serious macroeconomic imbalances have emerged in Nigeria. A review of these macroeconomic indices shows that inflation accelerated to double-digit levels in 2000 and 2001. It increased from 6.94 to 18.87, respectively. This double-digit inflation continued until 2005 and decreased to single digits in 2006 and 2007. In 2008, the inflation rate reverted to double-digit (11.58) and continued to increase, and in 2010, it was 13.72 percent (International Monetary Fund [IMF], 2011). Unemployment is a major political and economic issue in most countries. In Nigeria, years of corruption, civil war, military rule, and mismanagement have hindered the country's economic growth.

The contribution of the manufacturing sector's value added to the real sector of the economy cannot be downplayed when considering its role in building grounds for development, its employment potential and its financial impacts on the economy. Apart from laying a solid



foundation for the economy, it also serves as an import-substituting industry, providing a ready market for intermediate goods. Therefore, stating it in the words of Aderibigbe (2004); the manufacturing industry contributes significantly to the nation's economic development by increasing government revenue through tax; improving the standard of living; infrastructural growth; contributing to Gross National Products (GNP); employment generation; enhance manpower development; etc.

Monetary policy has been described as a deliberate effort by the monetary authorities to control the money supply and the credit conditions to achieve certain broad economic objectives that might be mutually exclusive. For most economies, monetary policy objectives include price stability, maintenance of the balance of payments equilibrium, promoting employment and output growth, and sustainable development. These monetary policy measures are necessary for attaining internal and external balance and promoting long-run economic growth. For example, an expansionary monetary policy designed to stimulate economic growth will lower the interest rate. It may generate higher inflation which the level of growth may not be able to prevent (Gertler & Gilchrist, 1991). The effectiveness of monetary policy in achieving its target objectives depends strongly on the operating economic environment, the institutional framework adopted, and the choice and mix of the instruments used.

On the other hand, fiscal policy involves using parameters such as taxation, budget and quotas that will influence government revenue and expenditure to achieve macroeconomic objectives that monetary policy also stands to achieve. For instance, tax revenue will increase when an economy is expanding, all things being equal, even when there is no change in fiscal policy. The increase in tax revenue could further increase government spending, thus promoting more expansion because such expenditures are channelled into the provision of basic infrastructures that complement private investment.

However, several earlier and recent studies have adjudged the impact of monetary variables on income growth to be stronger than that of fiscal variables in developed countries (Andersen & Jordan, 1968; Keran, 1970; Elliot, 1975; Batten & Hafer, 1983; Senbet, 2011) while similar result has also been reported for some developing countries (Ajisaje & Folorunso, 2002; Shahid et al., 2008; Anna, 2012; Ezigbo, 2012). Some other authors have found a greater role for fiscal policy in some developed countries (Poddar & Hunking, 1971; Artis & Nobay, 1972) and developing countries (Hussain, 1982; Darrat, 1984; Chowdhury, 1986; Munongo, 2012) while some other authors have a significant complementary role for both policies (Simorangkir & Adamanti, 2010; Mahmood & Sail, 2011). As evident from the literature, there is a general support for monetary policy in developed countries, while the finding on developing countries is mixed.

Evidence has also shown support for both monetary and fiscal policy in promoting economic growth in Nigeria. It is also evident from some studies that monetary rather than fiscal policy impacted a strong and significant influence on the growth of the Nigerian economy (Ajisafe & Folorunso, 2002; Adefeso & Mobolaji, 2010) while some other studies have also reported a significant role for fiscal policy (Olaloye & Ikhide, 1995; Philip, 2009 and 2011; Medee & Nenbee, 2011). Some recent evidence supports the view that none of the two policies is superior as each has an important role to play (Effiong, 2012; Ogege & Shiro, 2012; Sanni et al., 2012; Enahoro, 2013). The general consensus, however, in the literature is the advocacy of policy mix in Nigeria and developing countries in general.



Previous studies on the government's role in promoting real sector development in Nigeria have yet to capture the two most important roles together in formulating their models for analysis. Olanipekun and Benjamin (2015) relied only on fiscal policies as a measure of the government's role, while Sylvia, Ifeoma and David (2015) used monetary policy to model the role of government in economic growth and development. Also, they used the VAR model in their analysis. In this study, fiscal and monetary policies are combined to assess their relative effectiveness on the economy's manufacturing sector over the period studied. Specifically, this paper looked at the impact of fiscal and monetary policies on manufacturing sector output in Nigeria from 1981 – 2018.

LITERATURE REVIEW

Theoretical Literature

Keynesian Theory

The Keynesian theory did not buy the notion that the relationship between money and price is direct and proportional. They share the view that it is indirect through the rate of interest. Also, they reject the notion that the economy is always at or near the natural level of real GDP so that Y in the equation of exchange can be regarded as fixed. They also reject the proposition that the velocity of money circulation is constant. Keynesians believe that expansionary monetary policy increases the supply of loanable funds available through the banking system, causing interest rates to fall. With lower interest rates, aggregate expenditures on investment and interest-sensitive consumption goods usually increase, causing real GDP to rise. Hence, monetary policy can affect real GDP indirectly.

Monetary Policy Theory

Monetarist is a school of thought led by Milton Friedman. This school of thought is a modern variant of classical macroeconomics. They developed a subtler and more relevant version of the quantity theory of money. Like any school of thought, Friedman (1963) emphasised on the supply of money as the key factor affecting the well-being of the economy and as well accepted the need for an effective monetary policy to stabilise an economy. He also thinks that money supply should grow at a fixed rate to promote steady growth rate, instead of being regulated and altered by the monetary authority. Friedman equally argued that since money supply might be demanded for reasons other than the anticipated transaction, it can be held in different forms, such as money, bonds, equities, physical goods and human capital. Each form of this wealth has a unique characteristic of its own and a different yield. These effects will ultimately increase aggregate money demand and expand output. The Monetarists acknowledge that the economy may not always be operating at the full employment level of real GDP. Thus, monetarists in the short run argue that expansionary monetary policies may increase real GDP by increasing aggregate demand. However, in the long run, when the economy is operating at the full employment level, they argue that the quantity theory remains a good approximation of the link between the supply of money, price level, and the real GDP. Also, in the long-run expansionary monetary policy leads to inflation and does not affect the real GDP.

Public expenditure policy is one of the most important instruments of public sector policy. Traditionally, the normative theory of public finance, starting with Musgrave, identifies three



functions of fiscal policy allocation, distribution and stabilisation of resources. Using fiscal policy, any government attempts to ensure the effective utilisation of limited resources, equitable income distribution, and economic development stability (Musgrave & Musgrave, 1984). The nature of the relationship between public expenditure and economic growth via industrial sector performance has stimulated a series of theoretical and empirical studies. Major theoretical work was done by Barro (1988), Barro and Sala i-martin (1995), and Devarajan, (1996). In his seminar work, Barro develops a simple endogenous growth model of government spending. In this model, he finds a non-linear relationship between public expenditures which are complementary inputs to private production and a negative relationship between government consumption and the economy's growth.

Empirical Literature Review

Adefeso and Mobalaji (2010) explored the impact of fiscal-monetary policy on economic growth in Nigeria. Their primary objective was to re-estimate and re-examine the relative effectiveness of fiscal and monetary policies on economic growth in Nigeria using annual data from 1970 to 2007. The error correction and co-integration techniques were used to analyse the data and draw policy inferences. Their result showed that the effect of monetary policy is much stronger than fiscal policy. They suggested that there should be more emphasis and reliance on monetary policy for the purpose of economic stabilisation in Nigeria.

Ogbole, Amadi, and Essi (2011) wrote on fiscal policy and its impact on economic growth in Nigeria (1970-2006). The study involves a comparative analysis of the impact of fiscal policy on economic growth in Nigeria during regulation and deregulation periods. Econometric analysis of time series data from the Central Bank of Nigeria was conducted. Results showed a difference in the effectiveness of fiscal policy in stimulating economic growth during and after regulation period. Appropriate policy mix, prudent public spending, setting of achievable fiscal policy targets and diversification of the nation's economic base, among others, were recommended.

Chuku (2010) used quarterly data to explore the monetary and fiscal policy interactions between 1970 and 2008. The article examines the nature of fiscal policies in Nigeria using the vector auto-regression (VAR) model. The evidence indicates that monetary and fiscal policies in Nigeria have interacted counteractively for most of the sample period (1980-1994). No symmetric interaction pattern was observed between the two policy variables at other periods.

Huang and Padilla (2002) wrote on fiscal policy and implementation of the Walsh Contract for Central Bankers. They developed a simple macroeconomic model where the time inconsistency of optimal monetary policy is due to tax distortions. They conclude that implementing the optimal policy mix requires either that the Central bank enjoy primacy over the fiscal authority or that fiscal policy be delegated to an independent authority.

Omitogun and Ayinla (2007) empirically examined fiscal policy's contribution to achieving sustainable economic growth in Nigeria. They used the Solow growth model estimated using the OLS method. They found that fiscal policy has not effectively promoted sustainable economic growth in Nigeria. They suggested that the Nigerian government should stop the incessant unproductive foreign borrowing, wasteful spending and uncontrolled money supply and embark on specific policies aimed at achieving increased and sustainable productivity in all sectors of the economy.



Gupta et al. (2016) examined how investment in key infrastructure sectors impact on India's economic growth and the extent of the significance of the impact. The study mainly focused on the qualitative analysis of all the infrastructure sectors to know their relative importance in growth. In the final part of the analysis, a budget allocation model was formulated with the help of a linear programming technique. This offered a fresh viewpoint of the prospective inclination of the government budget and its extent of allocation to the diversity of infrastructure sectors. The study found that investment in telecom, industrial minerals and water are the most significant sectors driving Country Economic Performance and Prudence Indicator (CEPPI) in India, Hence, the study recommended that government should prioritize these sectors in budgetary allocations.

Ekesiobi et al. (2016) utilised Augmented Dickey-Fuller (ADF) unit root test method and Ordinary Least Square (OLS) technique to empirically determine the stationary of the data on public educational spending, primary school enrolment rate, per capita income, exchange rate, foreign direct investment and manufacturing output growth and the relationship between the underlying explanatory variables and manufacturing productivity. The empirical evidence from the study showed that public education spending exerts an insignificant positive impact on manufacturing output growth. The study recommended, among other things, that fiscal policy plans should target education spending to drive manufacturing output growth significantly.

METHODOLOGY

Nature and Source of Data

This paper utilised time series data to investigate the relationship between real sector development proxied by manufacturing out as a GDP ratio and the underlying explanatory variables in the model. The data for each variable were sourced from CBN Statistical Bulletin and World Bank's World Development Indicators. The observations for each of the series spanned from 1981 to 2018.

Model Specification

In order to empirically capture the link between government roles and real sector development, a multivariate regression model is employed. Fiscal and monetary policy initiatives form the basis for measuring government roles. Specifically, total government expenditure (TER) represents fiscal policy measures, whereas interest rate (INR) and broad money supply (BMR) are used in capturing monetary policy actions. Additionally, real sector development is measured by manufacturing output as a ratio of GDP (MSR). The formal specification of the model based on the notation of the variables is of the form:

$$MSR_t = b_0 + b_1TER_t + b_2BMR_t - b_3INR + U_t$$

Where: MSR = Manufacturing sector output as the ratio of GDP, TER = Total government expenditure as a ratio of GDP, INR = Interest rate, BMR = Broad money supply, b_0 = Constant parameter, $b_1 - b_3$ = Estimates of the explanatory variables, U_t = stochastic error term

The error correction model (ECM) is specified as follows:



$$\Delta MSR_t = \alpha_0 + \sum_{i=1}^M \alpha_1 \Delta MSR_{t-1} + \sum_{i=1}^M \alpha_2 \Delta TER_{t-1} + \sum_{i=1}^M \alpha_3 \Delta BMR_{t-1} + \sum_{i=1}^M \alpha_4 \Delta INR_{t-1} + \Phi ECM_{t-1} + V_t \quad 1.2$$

Where: MSR, TER, BMR and INR are previously explained, M and Δ are lag order and first difference notation respectively, α_0 = Constant parameter, $\alpha_1 - \alpha_4$ = short-run coefficients of the regressors, ECM = Error correction term lagged for one period, ϕ = Coefficient of ECM which measures the speed of adjustment, V_{1t} = Random disturbance term.

Variable Description

Manufacturing output (MSR): This is measured by the manufacturing sector's output as a ratio to GDP. It defines the total value added by manufacturing to GDP. It served as the dependent variable in this model.

Total government expenditure (TER): The total expenditure captures fiscal policy operation. It encompasses the ratio of total expenditure to the GDP, which captures the extent of government participation in the economy using the instrument of fiscal policy. This is expected to have a positive impact on the manufacturing industry either positively.

Broad money supply (BMR): The broad money supply is a vital measure of monetary policy operation. It is measured in this paper by the ratio of broad money supply (M_2) to GDP. It is expected that an increase in monetary aggregate is expected to boost the real sector development through an increase in the out manufacturing sector's output.

Interest rate: This captures the monetary policy aspect of government economic participation. Specifically, the interest rate concerns the cost of funds for investors and other players in the real sector. Interest is perceived as the financial cost of borrowing, and the manufacturing business cannot be sustained without borrowing. Therefore, as the interest rate increases, access to needed capital and manufacturing output decreases.

Method of Data Analysis

The error correction mechanism (ECM) is employed in this paper to estimate the dynamic regression estimates and the speed at which the model reconciles short-run dynamics with long-run equilibrium. Notably, the estimation of the ECM follows Engel and Granger's (1987) proposition that cointegrating relationship among variables is better expressed as an ECM. In addition to the ECM, Granger causality test was employed in estimating the direction causality between the explanatory and dependent variables. Hence, the null hypothesis of no causality was tested as the alternative hypothesis of causality with the application of chi-square (χ^2) asymptotically distributed statistic at 5 percent level of significance. Additionally, some pre and post estimation tests conducted in this paper are explained below:

3.3.1 Unit Root Test: The Augmented Dickey-Fuller unit root method developed by Dickey and Fuller (1981) was adopted to determine if the variables are stationary or not. The general specification of the unit root model with intercept and trend is of the form:



$$\Delta Y_t = b_0 + b_1 Y_{t-1} + \sum_{i=1}^n c_i \Delta Y_{t-i} + u_t \quad (1)$$

Where: Y_t = variable under investigation, b_1 and c_i = parameter estimate of the variables, n = optimal lag length, Δ = First difference operator and u_t = Stochastic term. The lag order for each of the variables was automatically selected using Schwarz Information Criterion (SIC).

ii. Cointegration Test: This study adopted Johansen and Juselius's (1990) procedure, a multivariate-based methodology for differenced integrated variables. The null hypothesis of no cointegration shall be tested against the alternative of cointegration. The test statistics (Trace and Maximum Eigen value statistics) shall be based on a 5 percent level of significance. The model for the cointegration test is specified as:

$$F_{trace}(r) = -N \sum_{i=r+1}^n \log(1 - \hat{\lambda}_i) \quad (2)$$

$$F_{max}(r, r+1) = -N \log(1 - \hat{\lambda}_{r+1}) \quad (3.3)$$

Where: $F_{trace}(r)$ and $F_{max}(r, r+1)$ denote Trace and Max-Eigen statistics respectively, $\hat{\lambda}$ = coefficients of the characteristic roots, N = sample size, r = cointegrating vectors, n = lag length and \log = notation for logarithm transformation

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics for the variables are summarised in Table 1

Table 1: Summary of descriptive statistics

	BMR	INR	MSR	TER
Mean	14.30263	17.82661	0.128285	0.082872
Median	12.70000	11.80000	0.124036	0.082079
Maximum	21.30000	76.80000	0.201190	0.178561
Minimum	9.200000	0.200000	0.065528	0.001097
Std. Dev.	3.973458	18.64789	0.046620	0.032479
Observations	38	38	38	38

Source: Author's computation based on data from CBN Statistical Bulletin and WDI



Based on the key components of the descriptive statistics, it was observed that the ratio of manufacturing value added to GDP averaged 0.128 per cent. In contrast, the average values for broad money supply and interest rate are 14.303 percent and 17.827 percent respectively. The mean values further reveal that the ratio of government expenditure to GDP averaged 0.0828 percent. The standard deviations for each of the series indicate that all the variables cluster around their respective mean values. The values of the standard deviation suggest that the variables are associated with the least variance.

Unit Root Tests

The unit root test was conducted using ADF method and the results are presented in Table 2.

Table 2: ADF unit root test results

Variable	levels test results	First difference test	Order of integration
	t-statistic	t-statistic	
MSR	-2.468036 (0.3411)	-7.975479 (0.000)	I(1)
BMR	-2.242805 (0.4532)	-5.519333 (0.000)	I(1)
INR	-2.930220 (0.1652)	-5.535637(0.0003)	I(1)
TER	-1.028825 (0.9270)	-10.0360 (0.000)	I(1)

Source: *Author's computation based on data from CBN Statistical Bulletin and WDI*

The unit root test results indicate that none of the variables is stationary at levels. This necessitates the acceptance of the null hypothesis of unit root at a 5 percent level of significance. However, the variables were transformed via first differencing, and it was found that they all the variables are stationary at first differencing. It, therefore, follows that the variables are integrated into order one I(1). This provides the basis for conducting the application Johansen maximum likelihood cointegration test method.

4.3 Cointegration Tests

The cointegration test for the variables is performed using the Johansen-Juselius method. The results are summarised in table 3.

**Table 3: Summary of Johansen cointegration test result**

Series: MSR TER BMR INR				
Hypothesized	Eigenvalue	Trace	0.05	Prob.**
No. of CE(s)		Statistic	Critical Value	
None *	0.547077	54.09724	47.85613	0.0116
At most 1	0.311188	26.37607	29.79707	0.1178
At most 2	0.262891	13.32853	15.49471	0.1033
At most 3	0.072994	2.652835	3.841466	0.1034
Hypothesized	Eigenvalue	Max-Eigen	0.05	Prob.**
No. of CE(s)		Statistic	Critical Value	
None *	0.547077	27.72117	27.58434	0.0480
At most 1	0.311188	13.04754	21.13162	0.4479
At most 2	0.262891	10.67570	14.26460	0.1712
At most 3	0.072994	2.652835	3.841466	0.1034

Source: Author's computation based on data from CBN Statistical Bulletin and WDI

*Note: * implies the rejection of the null hypothesis at 5 per cent level*

From the above results, there exists one cointegrating vector in both trace and maximum eigenvalue tests results. This is indicative that the variables have long run relationship. Hence, the null hypothesis of no cointegration is rejected at 5 percent level of significance. On the basis of this finding, the ECM is estimated to capture the short run dynamic relationship amongst the variables and the speed of adjustment to the long term equilibrium.

4.4 Estimation of Parsimonious ECM

The parsimonious ECM was estimated using the least squares method, and the results are summarised in table 4.

**Table 4: Parsimonious ECM**

Dependent Variable: MSR				
Method: Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.143059	0.004377	32.68675	0.0000
D(BMR(-1))	-0.002786	0.003251	-0.857167	0.4002
D(BMR(-2))	-0.002213	0.003267	-0.677365	0.5049
D(BMR(-3))	-0.002489	0.003209	-0.775615	0.4459
D(INR(-1))	0.000285	0.000312	0.911173	0.3717
D(INR(-2))	0.000224	0.000300	0.746229	0.4631
D(INR(-3))	0.000162	0.000322	0.504475	0.6187
D(TER(-1))	5.962849	0.645821	9.232973	0.0000
D(TER(-2))	3.182601	0.363138	8.764160	0.0000
D(TER(-3))	0.105713	0.203735	0.518876	0.6088
ECM(-1)	-0.689221	0.218522	-3.154011	0.0024
R-squared	0.832799	Mean dependent var		0.122097
Adjusted R-squared	0.760103	S.D. dependent var		0.045195
S.E. of regression	0.022136	Akaike info criterion		-4.526994
Sum squared resid	0.011270	Schwarz criterion		-4.033172
Log likelihood	87.95891	Hannan-Quinn criter.		-4.358587
F-statistic	11.45591	Durbin-Watson stat		1.701198
Prob(F-statistic)	0.000001			

Source: Author's computation based on data from CBN Statistical Bulletin and WDI



The result in table 4 shows that broad money supply and rate of interest are statistically insignificant in influencing manufacturing output. This finding suggests that contrary to expectations, monetary policy measures do not significantly drive the development of the real sector. The results further reveal that the second and third lag of the ratio of government expenditure to GDP has a significant positive impact on manufacturing output. A 1 percent increase in the first lag of government expenditure increases manufacturing output by 5.962 percent. Similarly, with a percentage in the second lag of government expenditure, manufacturing output increases by 3.182 percent. The positive impact of public expenditure on manufacturing output is in accordance with the theoretical a priori expectations. The estimated ECM parameter (-0.689) indicates that the model is convergent with a high speed of 68.9 percent. This indicates that short-run changes in any of the regressors are corrected in the very shortest possible period to achieve a long-run equilibrium position. The coefficient of determination indicates that 83.27 percent of the overall changes in manufacturing output are due to changes in the model's fiscal and monetary policy variables. More importantly, the overall test for the statistical significance of the model reveals that the explanatory variables are jointly significant in influencing manufacturing output over the study period. This is indicative of the variables that explanatory variables are associated with high forecasting ability.

4.4 Granger Causality Test Results

The causal links between the manufacturing output and underlying measures of government policies are captured using pairwise Granger causality tests. The results are summarised in Table 5.

Table 5 Pairwise Granger causality test results

Pairwise Granger Causality Tests			
Null Hypothesis:	Observation	F-Statistic	Prob.
TER does not Granger Cause MSR	35	3.74383	0.0222
MSR does not Granger Cause TER		0.94685	0.4313
BMR does not Granger Cause MSR	35	0.34578	0.7924
MSR does not Granger Cause BMR		2.91584	0.0516
INR does not Granger Cause MSR	35	1.65510	0.1993
MSR does not Granger Cause INR		1.44906	0.2497
BMR does not Granger Cause TER	35	3.57626	0.0263
TER does not Granger Cause BMR		1.08300	0.3724
INR does not Granger Cause TER	35	0.00878	0.9988
TER does not Granger Cause INR		2.03721	0.1314
INR does not Granger Cause BMR	35	3.17540	0.0395
BMR does not Granger Cause INR		0.34345	0.7941

Source: Author's computation based on data from CBN Statistical Bulletin and WDI



The pairwise Granger causality test results reveal that unidirectional causality flows from ratio of government expenditure to manufacturing output. In this case, the null hypothesis of no causality is rejected. This is suggestive that fiscal policy is has a predictive power for manufacturing productivity. Similarly, the result reveals that a unidirectional causality flows from manufacturing output to a broad money supply. It was further deduced from the results that a broad money supply granger causes government expenditure while an interest rate granger causes a broad money supply. Overall, the results indicate that fiscal policy, especially government expenditure, can be relied upon in predicting changes in manufacturing output.

CONCLUSION

Although, there are numerous empirical investigations on the role of the government in the real sector of the Nigerian economy, this paper mirrors an improved approach to government participation in the development of the real sector through its role in coordinating both fiscal and monetary policies. The findings from empirical investigations reveal that the variables are cointegrated. Hence, the variables are adjudged to have a long-run relationship over the sample study. It was found that the ratio of government expenditure to GDP has a significant positive impact on manufacturing output. It, therefore, follows that the effectiveness of government in driving real sector development manifests through its fiscal policy operations. However, it was found that broad money supply and rate of interest are statistically insignificant in influencing manufacturing output. This is a pointer that monetary policy has not been effective in fostering the development of the sector in Nigeria. The result further reveals that there is evidence of unidirectional causality from total government expenditure to manufacturing output. This supports the short-run result that public expenditure has been playing an important role in sustaining real sector development. The conclusion drawn from the findings is that fiscal policy operations offer opportunities for keeping the Nigerian real sector on the path of rapid and sustainable development. Thus, it is recommended for proper monitoring of fiscal policy measures, especially public expenditures, so as to ensure they are accounted for holistically and effectively utilised in fostering real sector development.

REFERENCES

- Adefeso, H. A. and Mobolaji H. I. (2010). 'The Fiscal-Monetary Policy and Economic Growth in Nigeria: Further Empirical Evidence.' *Pakistan Journal of Social Sciences*, 7(2): 137-142.
- Ajayi, S.I. (1974). 'An Econometric Case Study of the Relative Importance of Monetary and Fiscal Policy in Nigeria.' *The Bangladesh Economic Review*, 22, 559-576.
- Ajisafe, R. A and Folorunso, B. A. (2002). 'The relative effectiveness of fiscal and monetary policy in macroeconomic management in Nigeria.' *The African Economic and Business Review*, 3(1): 23-40.
- Andersen, L. C. and Jordan, J. L. (1968). 'Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization.' *Federal Reserve Bank of St. Louis*.



- Aderian L, T, Lam W.J, Lim S.N, Loh Z, H, Nicholas w w.(2015), *Impact of Macroeconomic Variable on Manufacturing Sector Growth in Malaysia*. Project submitted to dept of Economics, Faculty of Business & Finance University Tunku Abdul Rahman.
- Akinuledun S. O, Oluwole F. O (2014). *An Assessment of the Nigerian Manufacturing Sector in the Era of Globalization*. American Journal of Social Management Sciences pp 27-32.
- Adefeso, H. & Mobolaji, H. (2010). The fiscal–monetary policy and economic growth in Nigeria: Further Empirical Evidence. *Pakistan Journal of Social Sciences*, Vol.7 (2). Pp. 137-142.
- Abeng, M. O. (2006). Financial sector reform outcomes in Nigeria: A quantitative evaluation. *CBN Bullion*, Vol. 30(2), 53-69.
- Akujobi, L. E. (2012). Monetary Policy and Nigeria’s Economic Development. *African Research Review*, Vol 4(4). Pp. 153-161.
- Anyanwu, J.C. (2003). *Monetary economics: Theory, policy and institution*. Onitsha: Hybrid Publishers Ltd.
- Basse A. N. (1999). *Contemporary issues on monetary policy*. Calabar: University Press
- Chukwuedo .S. O. Ifere E. O (2017), *Manufacturing Sub-Sector and Economic Growth in Nigeria*. *British Journal of Economic, Management and Trade* pp (1-9).
- Ekesiobi, Chukwunonso S., Dimnwobi, Stephen K., Ifebi, Ogonna E. and Ibekilo, Bruno N. (2016). “Public Sector Education Investment and Manufacturing Output in Nigeria: Empirics and Policy Options”. *Public Policy and Administration Research*, 6(7).
- Emmanuel M.A. (2017), *Overcoming the Challenges of the Manufacturing Sector in Nigeria and the Outlook for 2017* conference paper: March 2017.
- Ernest S. O (2013), *Macroeconomic Variables and the Productivity of the Manufacturing Sector in Nigeria: A Static analysis* approved: *Journal of Emerging Issue in Economic Finance and Banking* vol No 5 pp 362-379.
- Gilbert L., Sieli. M (2016) *Manufacturing Industry and Economic Growth in Latin America Kaldorain Approach*. Cedeplar/federal university of Minas Gerais, Brazil.
- Gupta, Mukul, Rahul Budhadev, Varun Chotia, and N. V. Rao. (2016). "Integrating the issue of infrastructural investment with economic growth: The case of India." *Theoretical & Applied Economics* 23, no. 3.
- Ismalia, Imoughele L. E (2015), *Macroeconomic Department of Economic Growth in Nigeria: A Co-integration Approach*. *International Journal of Academic Research Economics and Management Science* vol 4, ISBN 7226-3624.
- Jhingan (1966), *The Economics of Development and Planning* 39th edition; Vrinda publication (p) ltd, Ashish complex, Delhi India.
- Maryann. A, Basse E. A (2013), *Evaluation of the Nigerian Industrial Sector and Economic Growth*. Dept of Business Administration Kaduna State University and Institute of public policy administration university of Calabar cross-River.
- Nigeria Manufacturing Sector Summary Report: 2010-2012 [www.prosperence .com](http://www.prosperence.com). Thursday, Jan 22/ National Bureau of Statistics.
- Nye T. E (2013) *Macroeconomic: the frontier of public policy* Dominus printing co, ph.
- Okechukwu .O. Gilbert I. N. (2000); *Macroeconomics Theory and Application* Emhai printing and publishing co Box 473 Uniport P. O. ph.



Olorundemi .S, Tomola M.O Felix O. A, Ogunlaye E. O (2013). *Manufacturing Performance in Nigeria; Implication for Sustainable development*, Asian economic and financial review (AGSS) pp1195-1208.

Palre M, Edmond H. M, Prudence A, M Impact of Macroeconomics Factors on Industrial Production in Ghana Methodist University College Ghana and the University of Ghana. Performance of Manufacturing Sector in Nigeria Economic Essay:
<https://www.uniassignment.com>

Raufu O. S, JP Morgan C, Alan. H (2016) *Determinates of Manufacturing Sector Growth in Sub-Sahara African Countries*. http://www.aabri.com/copy_right.html AABRI journal. Research in Business and Economic Journal Volume 12.