

The Role of Government Policies on the Nigerian Manufacturing Sector

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Abstract

This paper examines the effects of government policies on the manufacturing sector in Nigeria. The study used stationarity test such as the Augmented Dickey-Fuller (ADF) test and Johanson cointegration test. The ADF test shows that the variables are stationary at first difference while the Johanson cointegration test shows that all the independent variables exhibit a long-run equilibrium relationship with the manufacturing sector output. The result from the fiscal side shows that recurrent expenditure, subsidy and petroleum profit tax have a negative and significant effect on manufacturing output while capital expenditure has a significant and positive effect on the manufacturing output. From the monetary side credit to the manufacturing sector, commercial bank lending rate have a negative but significant effect on the manufacturing output while exchange rate and money supply have a positive and significant effect on the manufacturing sector output in Nigeria. The study, therefore, recommends that there should be a synergy between government expenditure and money supply so that the flow of money supply would impact directly on capital expenditure in the area of provision of infrastructure and help to create an enabling environment for the interaction of monetary and fiscal policy to achieve the objective of economic growth.

Keyword: *Government policies, Manufacturing sector, Capital expenditure, Infrastructure*

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Background to the Study

In the world over, the role of government policies in the form of monetary and fiscal policies in stimulating the manufacturing sector output cannot be underestimated. Monetary policy includes the use of Open Market Operation, Rediscount Rate, Selective Credit Control, Moral Suasion etc while fiscal policy involves the use of taxes and government expenditure. These policies are very key and strategic and are often adjusted from time to time with the aim of achieving macroeconomic objectives of economic growth, price stability, full employment and balance of payment equilibrium or one can say that they are used as stabilization measure in the economy. These objectives can have a profound influence on the various sectors of the economy in agriculture, mining, manufacturing and service sector etc and they have contributed in one way or the other to the development of the economy.

Several authors (Akogwu, 2005;Kakar, 2011;Iyeli and Azubuike, 2013; Ubesie, 2016 and Ugwuanyi and Ugwunta, 2017) have shown empirically that government expenditure has a long run and significant effect on economic growth in Nigeria while some other authors see the mixture of fiscal and monetary policies as been so strategic in economic development and thereby manifesting itself in the economy through conversion of raw materials into finished consumer or intermediate goods, employment generation; boasting of agricultural production, diversifying the economy, generating foreign exchange, promoting skills acquisition and reducing the dependence on foreign exchange as well as ensuring the full utilization of available resources (Anyanwu, Oyefusi, Oaikhenan and Dimowo,1997).

The contribution of the manufacturing sector to the gross domestic product has experienced a remarkable decline. This shows that manufacturing output declined by 1.5 percent in 2004 while its contribution to GDP was less than 8 percent for the period 2010 to 2013. Because of the low performance of the manufacturing sector, various policies were evolved such as National Economic Empowerment and Development Strategy (NEEDS), the Seven-point Agenda and the Transformation Agenda drew their inspiration from the vision 20-20 all based on ensuring economic growth and poverty reduction through employment, wealth creation, and entrepreneurship development. But despite all these policies, the manufacturing sector has not been able to perform these roles as expected.

The need to investigate the effects of government policies on the manufacturing sector in Nigeria readily comes to mind and several authors have looked at it in various ways. Some studies (Ademola, 2012; Olasunkanmi, 2013; and Eze and Ogiji, 2013) looked at the effect of fiscal policies on the manufacturing sector without considering monetary policy while other scholars (Mallick, 2011; Süleyman, 2013; Usman and Adejare, 2014 and Imoughele and Ismaila 2014) also investigated the effect of monetary policy on the manufacturing sector without considering fiscal policy. These views were captured by Bakare-Aremu and Osobase (2015) who observed a contrasting opinion on which of the two policies exert greater influence on economic or manufacturing sector activities.

Since there is no thin line separating fiscal policy from monetary policy to carry out these studies in isolation would be misleading to policymakers. The need to look at these policies simultaneously in relation to the manufacturing sector and since they are used to stimulate domestic production, looking at these policies together would go a long way in proffering recommendations that will aid the growth and development of the manufacturing sector. It is based on this that this study investigates the role of government policies on the manufacturing sector in Nigeria. To address this problem, this paper is divided into four sections. The first section is introduction, the second section is empirical investigation of the manufacturing sector determinants, the third section is the methodology and presentation of results and the fourth section is conclusion.

Empirical Investigation of Manufacturing Sector Determinants

To test the effectiveness of government expenditure in the Nigerian economy, various empirical analyses have been carried out. The study carried out by Olalokun (1975), for the period 1966 to 1973 shows that the decentralization of public spending on social, economic and political activities stimulated expenditure growth in the economy while Olowononi (1981) in the study of Kwara State from 1968 to 1976 used trend analysis and observed that there has been an upward movement of government expenditure which is attributed to the increase in administrative, social and economic services.

The study on government spending and economic growth by Maku (2009) shows that private and public investments have insignificant effect on economic growth in Nigeria while Agu, Okwo, Ugwunta, and Idike (2015) who used ordinary least squares regression after correcting for stationary of data discovered that government revenue has a positive effect on government expenditure while investment is lower than recurrent expenditure. Contrary to the findings by Maku (2009), Taiwo and Agbatogun (2011) used Johansen cointegration test, unit root, and error correction model and observed that capital expenditure, inflation rate, the degree of openness and current government revenue have a significant effect on the Nigerian economy. In terms of fiscal policy and taxes, Ilegbinosa (2013) used regression analysis and concluded that government expenditure and taxes have a significant positive effect on economic growth in Nigeria.

Tkalec and Vizek (2009) used regression analysis to investigate the determinants of manufacturing sector output in Croatia and stressed that fiscal conditions, the real effective exchange rate, and personal consumption mostly affect low technological intensity industries. Ademola (2012) opined using unit root and cointegration test that negative relationships exist between the government expenditure on the manufacturing sector and economic growth in Nigeria. On the sectorial basis, Olasunkanmi (2013) revealed that five sectors and four fiscal policy variables are cointegrated and that they exert a significant effect on sectorial output while Eze and Ogiji (2013) used similar method and discovered that government expenditure has a profound effect on the manufacturing sector output in Nigeria. The study further discovered that a long run relationship also exists between fiscal policy and manufacturing sector output.

Andabai (2014) ascertained the determinants of manufacturing sector using Ordinary least squares regression and stressed that a negative relationship exists between excise duty and capacity utilization on the one hand as well as between employment and capacity utilization on the other hand. The study stated that a positive relationship exists between lending rate and capacity utilization in Nigeria. In terms of fiscal policy and investment in Nigeria, Akpo, Hassan, and Friday (2015) used multiple regression and opined that government expenditure and gross domestic product have a significant effect on investment while corporate tax has a positive effect on investment.

In order to ascertain the effect of tax on companies' performance in Nigeria, Ezejiolor, Adigwe, and Echekeba (2015) used ANOVA and observed that it has a significant effect on the performance of the manufacturing sector in Nigeria. Falade and Olagbaju (2015) used Johansen cointegration and error correction mechanism and observed the existence of one cointegrating equation while the error correction mechanism revealed that capital expenditure has a significant effect on the manufacturing sector in Nigeria. The study also shows that recurrent expenditure has an insignificant effect on the manufacturing sector. Arikpo, Ogar, and Ojong (2017) used ordinary least squares regression and obtained a different result when it was observed that increase in government revenue reduces manufacturing sector output.

Peersman and Smets (2002) investigated the effect of monetary policy on eleven industries in seven European countries from 1980 to 1998. The study observed that in recession, 60 out of 74 industries are negatively affected while the average difference between the effect of a recession and boom is positive at 0.48. Ibrahim and Amin (2005) investigated the macroeconomic determinants of monetary policy on the manufacturing sector in Malaysia using the VAR model. It was stated that contractionary monetary policy has a negative impact on the real sector of the economy. The result from impulse response shows that the output of the manufacturing sector is larger than other sectors of the economy and the exchange rate shocks tend to have a significant effect on the manufacturing sector than the output of other sectors of the economy. Ghosh (2009) used a similar method in India and observed that industrial output responds to differential monetary contractions and the responses tend to be caused by two variables which are interest rate and financial accelerator.

Mallick (2011) used Granger causality and the ARDL cointegration approach to determine the effect of macroeconomic policy on the construction company in India. It was stressed that commercial bank credit, exchange rate, gross output growth Granger cause construction sector growth in India. The study also shows that commercial bank credit and income are major determinants of the construction company growth. In terms of employment generation, Laokulrach (2013) conducted a study on the effect of fiscal and monetary policy in Thailand using multiple regression and hinted that the determinants of employment in the service sector are supply side and socio-economic factors, trade openness, industrialization, and wage rate.

In Turkey, Süleyman(2013) used VAR model to show that money supply has a significant effect on the manufacturing sector credit volume. Edoumiekumo, Karimo, and Amaegberi (2013) evaluates the impact of monetary policy on the real sector in Nigeria using VAR framework and opined that monetary policy and interest rate do not have a direct impact on the manufacturing sector but its impact can be felt indirectly through credit and investment channels. In terms of industrial output and monetary policy, Usman and Adejare (2014) used multiple regression analysis and found that manufacturing output, treasury bill rate, deposit and lending and rediscount rate have a significant effect on industrial output in Nigeria from 1970 to 2014.

Ali, Adeeb, and Saeed (2014) investigated some monetary variables such as cash reserve ratio and discount rate and some manufacturing variables such as sales growth, leverage and size and revealed that monetary policy and company-specific factors have a significant impact on stock returns in Pakistan. Imoughele and Ismaila (2014) used VAR model and Granger causality test after testing for the stationary of data and discovered that variables such as external reserve, exchange rate, and inflation rate have significant effect on the manufacturing sector output while other variables such as broad money supply and interest rate do not have significant effect on the manufacturing sector output in Nigeria. On the other hand, the result from the individual variables shows that interest rate, exchange rate, and external reserve have a negative effect on the manufacturing sector output while money supply and inflation rate have a positive effect on output. The Granger causality test shows that exchange rate and external reserve granger causes manufacturing sector output.

Studies conducted by Toby and Peterside (2014) on the allocation of funds by bank management to the economy in Nigeria opined that management decision to allocate credit especially to the agricultural and manufacturing sectors were insignificant. Ogari, Nkamare, and Effiong (2014) efforts lie in the determination of commercial bank loans to the manufacturing sector in Nigeria using ordinary least squares regression. The result revealed that commercial bank credit has a significant effect on the manufacturing output. This result buttresses the fact that as commercial bank credit to the manufacturing sector increases manufacturing sector output also responds positively to commercial bank credit.

Okonkwo, Egbulonu, and Mmaduabuchi (2015) used Johannes co-integration equation and established that long-run relationship exists between monetary policy and manufacturing sector output in Nigeria while the error correction model revealed that money supply and credit to the private sector have a significant effect on the manufacturing sector. Bakare-Aremu and Osobase (2015) investigated the effects of fiscal and monetary policies on the Nigerian manufacturing sector using ordinary least squares techniques augmented with unit root and error correction techniques to ascertain the long and short run relationships. The result revealed that both policies have a significant effect on the manufacturing sector in the economy. It also discovered that long-run relationship exists between the variables in the study.

Mangla and Din (2015) investigated the impact of macroeconomic environment and the manufacturing sector in Pakistan using content analysis. It was discovered that macroeconomic environment has remained largely unstable on the face of high current account and fiscal deficits and a high rate of inflation and this have impacted negatively on the manufacturing sector. Lawal (2016) investigated the effect of exchange rate on the manufacturing sector in Nigeria from 1986 to 2014 using autoregressive distributed lag and discovered that exchange rate has a positive but insignificant effect on manufacturing sector output in Nigeria while in Malaysia Ibrahim and Amin (2005) discovered that exchange rate has a greater impact on the manufacturing sector than other sectors.

Omolade and Ngalawa (2016) studied the effect of monetary policy on the manufacturing sector in Algeria using structural vector autoregressive model and discovered that monetary policies such as interest rate have a significant effect on the manufacturing sector output. Igbinedion and Ogbeide (2016) investigated the effect of monetary policy and capacity utilization in Nigeria using error correction mechanism. The study shows that current and past level of interest rate has a significant effect on manufacturing sector capacity utilization. In the case of bank credit, it has a positive effect on the manufacturing sector output while exchange rate has a negative and insignificant effect on the manufacturing sector.

Modebe and Ezeaku (2016) evaluated the effect of inflation on the manufacturing sector in Nigeria using baseline regression analysis stating that inflation and interest rate negatively affects manufacturing sector output while exchange rate has a positive impact on the manufacturing sector. The Granger causality test revealed that there is unidirectional relationship running from exchange rate to manufacturing sector output while inflation and interest rate have a causal effect on the manufacturing sector output. Onakoya, Ogundayo, and Johnson (2017) observed that a long run relationship exists between monetary policy and the manufacturing sector in Nigeria and that a positive relationship exists between monetary policy and the manufacturing sector. Uzoma, Bowale, and Ogundipe (2017) used the structural vector autoregressive framework and concluded that monetary policy rate, exchange rate, and total government expenditure lead to a marginal decline of the manufacturing sector contribution to the Gross Domestic Product.

Agwu, Ujunwa, Ezike, Chijioke, and Ukemenam (2017) demonstrate that the factor hindering the growth and development of the manufacturing sector in Nigeria are inadequate basic infrastructures, corporate frauds, tax evasion, inexperienced management, and inconsistency in government macroeconomic and fiscal policies, communal and civil unrest. Ajayi and Aluko (2017) using ordinary least squares regression observed that monetary policy has more impact on economic growth than fiscal policy in Nigeria.

Theoretical Framework

The theory governing the effects of government intervention on an economy can be traced to Keynes' analysis which was further elaborated by scholars such as Adolf Wagner, Peacock, and Robert Solow. These theories will form the theoretical basis of this work. According to Keynes, government involvements in the economy can ensure effective and efficient distribution of goods and services such as in the manufacturing sector. This can be through monetary and fiscal policies such as tax, subsidy, government spending in the capital and recurrent expenditures, foreign exchange, loans, and advances etc all geared towards an increase in government expenditure so as to ensure economic growth.

Wagner's Law is named after the German political economist. The theory is based on the 'law of increasing state activities'. It was observed that government spending in the economy leads to industrialization and economic development. Peacock and Wiseman emphasize the need for government to spend on the economy in the provision of basic life sustenance while Solow stressed the need for capital accumulation in form of government expenditure through the provision of infrastructural facilities. Government involvement in the manufacturing sector through the provision of infrastructure, subsidies, roads, and credit facilities etc, have the tendency of increasing manufacturing sector output and economic growth.

Government Policies and the Nigerian Manufacturing Sector

The need to encourage manufacturing sector development was given attention right from the first national development plan (1962-68) when the federal government introduced the Import Substitution Industrialization Strategy (ISI) but was consolidated in the second National development plan period of 1970-74 (Olekah, Odeniran, Sere-Ejembi, Okafor, Obaje, Bada and Fagge, 2003). The aim was to domestically produce goods that were hitherto imported into the economy so as to conserve foreign exchange. This policy according to Sagagi (1986) did not meet its required objective.

The federal government's abolition of the Approved User Scheme (AUS) and the General Concession Rates of Duty (GCRD) granted low and concessionary rates on raw materials and other intermediate products imported by designated manufacturer firms. Thus ad valorem rates of duty ranging from 10 to 75 percent were levied on raw materials and intermediate products which hitherto attracted low rates (CBN1984). This policy did not achieve the objective of reduction of imported goods instead there was massive importation of goods and services, poor capacity utilization, high level of unemployment, outflow of foreign exchange as a result of high import bill, increase in external debt as well as faulty foreign exchange (Okpe and Ajegi, 2006).

Because of the abysmal performance of the policy of regulation, the federal government took a bold step by introducing the Structural Adjustment Programme in 1986. The overall policy objective of SAP was anchored on the private sector driven economy and export promotion strategy.

The fiscal policies introduced in 1990 was aimed at promoting the export of manufactured goods, creation of employment opportunities, production for local industries, enhancement of locally sourced inputs and reduction in the tax burden on individuals and corporate bodies. There were also measures to further simplify the procedures for processing the Duty Drawback Schemes and a ban on exportation of primary products such as raw hides and skin and palm kernels (CBN 1990). Outside of the fiscal policy was the monetary policy which according to Dagogo (2014) was to consolidate the gains from SAP which led to the adoption of the National Rolling Plans from 1990 to 1992. Institutions such as the Nigerian Industrial Development Bank (NIDB), Nigerian Bank for Commerce and Industries (NBCI), Community Banks, Nigerian Agriculture and Co-operative Bank (NACB), Urban Development Bank(UDB) and Bank of Industries(BOI) were all aimed at fostering the development of the manufacturing sector in the provisions of long-term loan.

In 2002 the policy introduced was to ensure an increase in capacity utilization, protection against unfair competition, encourage the inflow of foreign exchange, and to provide incentives for investment in the manufacturing sector. In order to reduce the price of goods and services, there was the reversal of custom duties rates of major raw material imports for the manufacturing sector, sectoral capacity utilization, reduction of custom duties on basic raw material so as to boost domestic production and curtail the influx of imported goods which may compete and jeopardize local production. In order to enhance the local resource base(Anyawu, Oyefusi, Oiakhenam, and Dimowo; 1997 and Ogunwusi, and Ibrahim, 2014), firms had to look inward to source their materials instead of looking outwards for raw materials. This strategy was geared towards conserving the country's foreign earnings. The breweries grew and used local millet and maize while the ban on wheat importation further necessitated the baking of cornbread.

To avoid the lopsided spread of industries, the federal government introduced policies that would make industries to be located in selected regions based on the availability of raw materials and also to ensure inter-industry as well as inter-sectional linkages so that intra industrial linkages and transactions could be increased (Anyawuet al1997 and Ogunwusiet al,2014).

The manufacturing sector policy 2003-2007 was to; establish a structure and efficient micro-small and medium-size enterprise sector to enhance sustainable economic development, generate employment and create wealth; facilitate the development of an industrial sector that was internationally competitive and could take advantage of the existing preferential arrangements as well as give priority to the processing of Nigeria's abundant resource endowments into intermediate raw materials or finished goods for local consumption and export; and develop science and engineering infrastructure as well as trained technical and managerial personnel, physical plants, tools, spare parts, materials, and other inputs needed to operate efficiently and profitably.

To achieve the above policies, certain targets were stipulated that would make it possible to achieve an annual growth rate of at least 7 percent a year and to increase capacity utilization as well as to increase the private sector share of investment to about 70 percent by 2007 respectively. The fiscal policy in 2006, which was consistent with the provisions of the National Economic Empowerment and Development Strategy (NEEDS), was targeted at improving the quality of life and addressing infrastructural deficiencies. It was also aimed at wealth creation, employment generation and the achievement of the Millennium Development Goals (MDGs). The federal government was to develop critical Infrastructure that would aid industrial development which was emphasized in the Yar'adua's Seven Point Agenda.

The growth plan for 2017 to 2020 would aid the ease of doing business and fast track the growth of the economy. Some of the key industrial policy is the implementation of the Nigerian Industrial Revolution Plan (NIRP), promotion of innovation and technological led industries and encouraging the development of resource-processing industries while the incentives include improving access to finance through the banking sector that will support manufacturing firms through low-cost lending. Fiscal incentive involves the support to the development of industrial cities, parks and clusters, reviews of local and fiscal regulatory incentives, rationalize tariff and wavers on the equipment and machinery imports required for agro-industry etc.

Methodology

This study presents the variables used and they are obtained from the CBN statistical bulletin of various issues from 1971 to 2016. The variables are manufacturing output which is the dependent variable. The independent variables are government recurrent expenditure, capital expenditure, subsidy ,petroleum profit tax, exchange rate, real interest rate, commercial bank credit to the manufacturing sector and money supply. The variables influenced the dependent variable (manufacturing sector output) and they are equally influenced by variables outside the model. From the fiscal side, recurrent expenditure, capital expenditure, and subsidy are expected to have a positive effect on the manufacturing sector while petroleum profit tax is expected to have a negative effect on the manufacturing sector output. On the monetary side, commercial bank credit and money supply are expected to have a positive effect on the manufacturing sector output while lending rate and exchange rates are expected to have a negative impact on the manufacturing sector output. This study made use of the growth rate.

The model used in this study was specified based on the relationship between fiscal and monetary policies, the linear and functional forms of the model were presented.

The linear form of the model is specified.

$$MO = F(RGEX, CGEX, SUB, PPT, EXR, CLM, MS, LIR) \text{----- eq1}$$

$$MO = \delta_0 + \delta_1 RGEX + \delta_2 CGEX + \delta_3 SUB + \delta_4 PPT + \delta_5 EXR + \delta_6 CLM + \delta_7 MS + \delta_8 LIR + \mu \text{--- eq2}$$

Where MO is manufacturing sector output, RGEX is recurrent expenditure, CGEX capital expenditure, SUB is a subsidy, PPT is Petroleum Profit tax, EXR is exchange rate, CLM is a credit to the manufacturing sector, MS is money supply and LIR is the lending rate. In order to investigate the stationarity of data of the macroeconomic variables used in the study, the model was tested because it embodied both fiscal and monetary policies. The unit root test was conducted using the Augmented Dickey-Fuller test. The test was first conducted in levels and then in first difference. The result shows the order of integration of each of the variables as presented in Table1. The result shows that all the variables are stationary at first difference.

Table 1: Stationarity Test

Variables	ADF Test Statistic @ Level	ADF Test Statistic @ 1 st	1% Critical Value	5% Critical Value	10% Critical Value	Prob.	Order of Integration
MO	-1.6	-3.88	-3.64	-2.95	-2.61	0.0056	I(1)
RGEX	-1.88	-4.86	-3.65	-2.95	-2.61	0.0004	I(1)
CGEX	-0.10	-3.36	-3.65	-2.95	-2.61	0.0039	I(1)
SUB	0.02	-5.24	-3.66	-2.96	-2.61	0.0232	I(1)
PPT	-2.26	-7.07	-3.65	-2.95	-2.61	0.0000	I(1)
EXR	-0.19	-8.15	-3.65	-2.95	-2.61	0.0000	I(1)
CLM	3.24	-5.00	-3.59	-2.93	-2.60	0.0002	I(1)
MS	0.34	-7.63	-3.58	-2.92	-2.60	0.0000	I(1)
LIR	-1.19	-8.04	-3.59	-2.93	-2.60	0.0000	I(1)

Source: E-views 9.0 Extract, March, 2018

After performing the unit root test, the study proceeded to ascertain the long run relationship of the variables. Toward this end, the Johansen cointegration test was conducted as presented in table 2. The result shows that all the independent variables cointegrated with the manufacturing sector output as evidenced by the Trace and Eigenvalues of 5 and 2 cointegrating equation. By implication, it means that all the independent variables exhibit a long-run equilibrium relationship with manufacturing sector output in Nigeria.

Table 2: Johansen Cointegration Test

Null Hypothesis	Trace Statistic	0.05 Critical Value	Null Hypothesis	Max-Eigen Statistic	0.05 Critical Value
$r = 0^*$	287.42	197.37	$r = 0^*$	78.26	58.43
...	209.16	159.52	$r \leq 1^*$	56.08	52.36
$r \leq 2^*$	153.07	125.61	$r \leq 2$	43.85	46.23
$r \leq 3^*$	109.22	95.75	$r \leq 3$	34.61	40.07
$r \leq 4^*$	74.60	69.81	$r \leq 4$	29.53	33.87
$r \leq 5$	45.07	47.85	$r \leq 5$	21.15	27.58
$r \leq 6$	23.91	29.79	$r \leq 6$	12.75	21.13
$r \leq 7$	11.15	15.49	$r \leq 7$	6.48	14.26
$r \leq 8^*$	4.67	3.84	$r \leq 8^*$	4.67	3.84

Source: E-views 9.0 Extract, March 2018

Note: r represents a number of cointegrating vectors. Trace statistic and Max-Eigen statistic indicates 5 & 2 cointegrating equations each. * denotes rejection of the hypothesis at the 0.05 level

After performing the unit root test and the Johanson cointegration test, in the long run, the relationship among the variables was carried out.

Estimated Long Run Model 1

$$MO = -3.26RGEX + 17.24CGEX - 14.49SUB - 11.79PPT - 1.10CLM + 0.18MS + 11.19EXR - 20.44LIR$$

(3.05) (2.08) (1.63) (1.34) (0.33) (0.29) (2.52) (11.00)

-----eq7

Source: E-views 9.0 Extract, March 2018. Note: The standard errors are stated in parenthesis

From the fiscal side, the result shows that recurrent expenditure has a negative but insignificant effect on manufacturing sector output while capital expenditure has a positive and significant effect on the manufacturing output, this result supports similar findings by Falade and Olagbaju (2015). The effect of recurrent expenditure shows that as the government embarks on some recurrent expenditure, manufacturing sector output declines. The outcome of capital expenditure corresponds to apriori expectations and also to theoretical exposition. By implication, an increase in capital expenditure leads to increase in manufacturing sector output. The increase in manufacturing sector output will impact significantly on the economy by creating more employment, more income, increase in consumption of goods and services. Of course as the economy grows, there will be an increase in the inflow of foreign exchange since most of the manufacturing product will be exported to foreign countries.

The result from subsidy and petroleum profit tax shows that it has a negative but significant effect on manufacturing output. As evidenced in this study, whenever subsidy is increased, manufacturing output will fall. This simply means that the manufacturing firms have not been benefiting from the increase in government subsidy, this is because the provision of subsidy is being overshadowed by the increase in prices of goods and services as well as increase in tariff most especially electricity. This will be exacerbated by the negative impact of corruption which the manufacturing firms have to contend with. Tax has a negative effect on the manufacturing sector output as the result shows. The implication of this outcome is that whenever petroleum profit tax increased, the output of the manufacturing sector will decline and vice versa. This outcome will reduce the profitability of the manufacturing firms which will have a concomitant effect on employment, income as well as the consumption of goods and services.

From the monetary side, credit to the manufacturing sector has a negative but significant effect on manufacturing output. This result is contrary to the findings by Ogari, et al (2014) who observed that commercial bank loans have a significant effect on the manufacturing

sector. The negative effect of lending rate to the manufacturing sector as observed in this study goes on to buttress the point that as lending to the manufacturing sector rises output to the sector declines.

The result shows that money supply and exchange rate have a positive and significant effect on manufacturing sector output within the period. This result was corroborated with the study conducted by Süleyman (2013) and Okonkwo et al (2015) while it was contrary to the findings of Imoughele et al (2014) who discovered that money supply does not have a significant effect on the manufacturing output. The implication of the positive money supply on the manufacturing sector output is that money supply has an expansionary impact on the manufacturing sector output in the economy.

The result from exchange rate shows that it has a positive and significant effect on manufacturing sector output. This again agrees with the study conducted by Ibrahim et al (2005) and Imoughele et al (2014) while a contrary view was held by Igbiniedion et al (2016). They posit that as the exchange rate vis a vis the Nigeria naira increases, manufacturing sector output will also increase. This result has the tendency of encouraging export of goods and services as well as attracting foreign investors so they can take advantage of this exchange rate to invest in the domestic economy. This has the tendency of enhancing the nation's balance of payment position with the rest of the world.

VAR Lag Order Selection Criteria

A lag of 1 is chosen for the empirical model based on Schwarz Information Criterion, Sequential Modified LR Test Statistic, Final Prediction Error and Hannan-Quinn Information Criterion. Note that, large lag length reduces the impact of the independent variables on the dependent variable.

Table 3: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1367.34	NA	1.02	65.39	65.64*	65.48
1	-1308.21	98.55*	3.44*	64.29*	66.03	64.93*
2	-1280.89	37.72	5.79	64.70	67.93	65.89
3	-1250.03	33.80	9.96	64.95	69.67	66.68

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: E-views 9.0 Extract, March 2018

The error correction model presented in table 4 shows that the coefficient of short-run dynamics will equilibrate at 56 percent speed of adjustment while the R² of 71 percent

shows the relationship between the dependent and independent variables. It shows that 71 percent of the variation of manufacturing sector output is explained by recurrent expenditure, capital expenditure, subsidy, petroleum profit tax, commercial bank credit to the manufacturing sector, money supply, exchange rate and lending rate.

Error Correction Method

Table 4: Vector Error Correction Model

Variable	Coefficient	Standard Error	T statistics
ECM	-0.56	0.22	3.49
D(RGEX(-1))	-2.44	0.56	-1.95
D(CGEX(-1))	0.36	0.17	2.93
D(SUB(-1))	0.27	0.12	1.12
D(PPT(-1))	0.15	0.07	-2.63
D(CLM(-1))	2.14	0.51	1.59
D(MS(-1))	-0.57	0.32	2.00
D(EXR(-1))	-0.36	0.13	1.86
D(LIR(-1))	-1.92	0.98	-2.87

R² = 0.71 Adj R² = 0.68 F-Statistic = 5.346732 Log Likelihood = -123.67

Source: E-views 9.0 Extract, March 2018

Conclusion

The findings from fiscal and the monetary side are not too different from the combined studies conducted by various scholars. This is because the results obtained are similar. This result has a lot of policy implications for stimulating manufacturing sector for growth. From the monetary side, an increase in money supply will impact positively on manufacturing sector output. The exchange rate also has a positive effect on manufacturing output implying that the manufacturing sector should be encouraged to produce goods and services that would boost export discouraging imports thereby improving the nation balance of payment position. Efforts should be made to attract foreign manufacturing firms with the aim of generating more employment, income as well as ensuring the availability of consummation goods and of boosting the development of the entire economy.

The negative effect of credit to the manufacturing sector, commercial bank lending rate and petroleum profit tax clearly shows how the manufacturing sector has been constrained in terms of credit allocation. Commercial banks are out to make profits and are interested to lend on short term basis rather than on long term and since they cannot lend on long term basis. This has the capacity of reducing their lending ability and of course many of the desperate firms will have no choice than to borrow at high interest rate. This will increase the price of domestically produced goods and services compared with the imported ones. This are why the manufacturing sector has not fared well in the area of employment generation and wealth creation. No wonder, the Nigerian economy is flooded with cheap foreign manufactured goods and services to the detriment of expensive domestically manufactured goods and services. The federal government

should create an enabling environment through the bank of industry where the manufacturing firms could source for funds on single digit rate rather than on the double digit rate of interest that manufacturing sectors are presently borrowing.

The government should increase the subsidy to the manufacturing sector most especially on electricity and fuel so as to offset the negative impact of the decay in infrastructural facilities and corruption that is presently affecting the economy. The tax rate should be reduced so that manufacturing firms can enjoy their production of goods and services hence their profits. An increase in tax rate will make some manufacturing firms to relocate from Nigeria to a more conducive environment where the tax rate is low a good case in point is the exit of the Michelin company and other companies from Nigeria. If the high tax rate continues, it will worsen the rate of doing business which the Nigerian government is presently conversing for.

Recommendation

It is therefore recommended that government should harmonize her monetary and fiscal policy so that the flow of funds would directly impact on capital expenditure in the area of provision of infrastructure and to create the enabling environment to achieve the objective of economic growth. More so, more subsidies should be given to the manufacturing sector most especially in the area of electricity and fuel so as to reduce the cost of doing business. Since the manufacturing sector has the potentials of generating more employment in the domestic economy. This increase in subsidy should be complemented with a single digit interest rate and a tax friendly policy that will increase the profit prospects of the manufacturing sector.

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