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THE ROLE OF FINANCIAL SECTOR IN ENHANCING PERFORMANCE IN THE MANUFACTURING SECTOR IN NIGERIA

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ABSTRACT

The study examined the effect of financial sector development on manufacturing sector performance in Nigeria, using the firms' manufacturing capacity utilization as a proxy for manufacturing sector performance. Contribution of the manufacturing sector to the GDP in Nigeria in recent years is less than 10 per cent and it has been a source of concern to the government and other key players in the economy. The literature of the study was partitioned into four main sections and they include conceptual review, theoretical framework, research construct and empirical review. The study employed cointegration and error correlation model in the empirical analysis of the time series data which spanned 1985 to 2017. The choice of the method draws from the need to identify the short-run and long-run effects of the relationship, the data were sourced from the statistical bulletin of the CBN, various issues and the World Development Indicators, a publication of the World Bank. The analysis was done through the aid of E-View 10. The normalized cointegrating coefficients were significant at 5 percent level of significance. Specific findings suggest that money supply, credit to the private sector, and exchange rate have a positive and significant effect on manufacturing capacity utilization while interest rate and inflation rate which though are significant; have a negative effect on MCU and consequently output. The value of the error correction term shows that 51.32 percent of the discrepancies between the actual equilibrium and manufacturing capacity utilization is corrected in each period (annually). The study concludes that a well-structured and improved financial system will enhance the capacity utilization for the realization of improved output level in the sector. The study recommends among others that it is necessary to increase manufacturer's access to credit by keeping the cost of capital reasonably low so that capacity utilization of firms may increase and higher output level achieved in the sector.

Keywords: Financial sector, firm capacity utilization

1.0 BACKGROUNDS TO THE STUDY

In recent times, Nigerian government has shown interest in developing the agricultural and manufacturing sectors of the economy to give employment to the teeming unemployed and grow the economy. But while the agricultural sector is responding gradually to this renewed effort of the government, the manufacturing (real) sector is yet to show any sign of improvement judging from the indices of capacity utilization which negatively affects the value of output and value-added which have also continued to decline in real terms in the

sector. The contribution of the manufacturing sector to the gross domestic product (GDP) in most countries that were at the same level with Nigeria some few years back, ranges from 28 percent to 34 percent (Malaysia and Indonesia 28 percent, Thailand 34 percent, China 30 percent and Brazil 35 percent while Nigeria's contribution at the moment is less than 10 percent (Afolabi and Laseinde, 2019).

The economic structure of Nigeria reflects, typically that of an under-developed nation trait, where more than 50 percent of the GDP is being contributed by a single primary sector product (oil) (Chete, Adeoti, Adeyinka and Ogundele, 2014). Statistics show that Nigeria's economy has been on the downward trend, especially the contributions of the real sector which has been negatively affected by many factors which include but not limited to inadequate credit supply to the private sector, shortage of foreign exchange supply, lack of adequate power supply, inadequate money supply, high rate of inflation. All these shortfalls are what have combined to play down on the contribution of the manufacturing sector to GDP in Nigeria (Chete et al, 2014).

The manufacturing sector is an important sector in any economy because of its role in growing the economy as well as being the antidote for unemployment. The sector is equally a creator of wealth and a channel for sustainable development which is capable of promoting industrialization in the country (Mike, 2010). However, this has not been the experience in Nigeria and it has been a source of worry to the government and captains of industry in any respect. The linkage between financial sector's development and performance of the manufacturing sector has been a subject of debate among scholars in Nigeria (Udoh and Agbuagu, 2012; Asaleye, Adama and Ogunjobi, 2018; Ogbeide and Joshua, 2018). In particular, lack of access to finance has been one of the major problems facing the manufacturing sector. Lack of funds has made it difficult for some players in the sector to make investment in modern machines, information technology and human resource development which are quite critical in reducing production costs, raising productivity and improving competitiveness (Ogunsakin, 2014).

Low investment has been traced largely to banks' unwillingness to make credits available to manufacturers, due partly to the mismatch between the short-term nature of banks' funds and the medium or long-term nature of the credit requirement of the manufacturers. In addition, banks perceive manufacturing sector as high-risk area, unlike commerce in which returns are higher and also less risky. As noted by Adufu, Taiga and Tijani (2015), even when credit is available, high lending rates, which sometimes is over 40 percent, makes it unattractive to the manufacturers. This coupled with the issues of the high exchange rate and high cost of self-provision of electricity and other utilities which has been in place since when the Structural Adjustment Programme (SAP) was introduced, has led to high operational cost and consequently led to low capacity utilization in the sector (Aiyetan, 2015).

Capacity utilization of manufacturing firms is very critical in assessing the performance of the sector because it determines to a large extent how much of the installed capacity of the plant is being used as well as the output level. In light of the above, the study examines the effect of financial sector development on manufacturing sector capacity utilization in Nigeria. The study uses exchange rate supply, money supply, credit supply to the private sector, interest rate and inflationary level, as measures of financial sector development. Having

introduced the study in section one, section two is the literature review section three methodology, section four data presentation and analysis and section five is the summary of findings, conclusion and recommendations.

1.1 Statement of the Problem

Capacity utilization is one important factor that can affect productivity or output growth of the manufacturing sector (Gu and Wang, 2013). In the 1970s, 1980s and even up to early 1990s, capacity utilization of many manufacturing firms in Nigeria was on the average, more than 50 percent but in recent years, the indicator has been on a steady decline thus showing that the manufacturing sector is not contributing effectively to the growth of GDP in Nigeria. In the wake of this development, many studies aimed at investigating the effect of financial sector development on a manufacturing sector performance with respect to output and value-added growth has been carried out in Nigeria and such studies have come up with varying results(Aiyetan, 2015; Mesagan, Olunkwa and Yusuf, 2018; Ogunsakin, 2014; Abiola, Adama and Ogunjabi, 2018; Ogbeide and Joshua, 2016; Obamuyi, Adebisi and Edun, 2012), whereas Mesagan et al (2018) found that there is no significant relationship between financial sector development and manufacturing sector performance in Nigeria, Obamuyi, Adebisi and Edun (2012) and other researchers found that banks' lending rates positively and significantly affects manufacturing output and capacity utilization in Nigeria. However,none of the studies considered the effect of money supply, credit supply to the private sector, exchange rate, interest rate and inflation rate on capacity utilization of manufacturing firms in Nigeria. Consequently, it has become necessary to do a study that will mediate among the conflicting results as well as identify the factors that can enhance the performance of the manufacturing sector so that it can play the expected role of employment generation and significant contribution to the growth of GDP in Nigeria.

1.2 Objectives of the Study

The broad objective of the study is to examine the effect of financial sector development on manufacturing capacity utilization in Nigeria. But specifically, the study intends to:

(i) Determine the effect of money supply (M2) on firms' capacity utilization in Nigeria.

(ii) Ascertain the effect of credit to the private sector on firms' capacity utilization in Nigeria.

(iii) Establish the effect of interest rate on firms' capacity utilization in Nigeria.

(iv) Evaluate the effect of exchange rate supply on firms' capacity utilization in Nigeria.

(v) Find out the effect of inflation rate on firms' capacity utilization in Nigeria.

1.3 Research Questions

Statement of Hypotheses

The following null hypotheses were formulated to strengthen the analysis:

(i) Money supply (M2) does not have a positive and significant effect on firms' capacity utilization in Nigeria.

(ii) Credit supply to the private sector does not have a positive and significant effect on firms' capacity utilization in Nigeria.

(iii) Interest rate does not have a positive and significant effect on firms' capacity utilization in Nigeria.

(iv) Exchange rate supply does not have a positive and significant effect on firms' capacity utilization in Nigeria.

(v) Inflation rate does not have a positive and significant effect on firms' capacity utilization in Nigeria.

Scope of the Study

The study covers the manufacturing sector of the economy with particular reference to capacity utilization of firms and some elements of the financial sector in the nation's economy which includes money supply, credit to the private sector, exchange rate, interest rate and inflation rate. It investigates the effect of some financial system elements on manufacturing firms' capacity utilization in Nigeria and the time series data spanned 1985 to 2017.

2.0 REVIEW OF THE RELATED LITERATURE

2.1 Conceptual Review

Capacity utilization in an economic sense, in the opinion of Okunade (2018), refers to the ratio of actual output to the level of optimum output beyond which the average cost of production begins to rise. That is, it expresses output as a percentage of total potential output. Thus the capacity of a plant is seen as the maximum output that can be produced using the given technology and the fixed input when the variable input vector may take any non-negative value. It is equal to the ratio of observed output to the capacity of the plant (Coelli, Grifell-Tatje and Perelman, 2002). Therefore, capacity utilization can be defined as the ratio of actual output to the maximum or potential capacity output from a quasi-fixed input (Okunade, 2018). But to Nikiforos (2012), capacity utilization is the effective and full utilization of a plant's installed capacity in the production process of a firm.

On the other hand, financial development refers to the efficient functioning of an economy's financial system, being able to allocate surplus resources to the areas of need for the overall growth and development of the economy (Campbell and Aseleye, 2016). Such a system would be able to play the role of intermediation effectively and thus facilitate the growth of the output in the real sector through capacity utilization of manufacturing firms. The consensus is that a good working financial system should be able to attract sufficient funds from surplus areas to the deficit sectors with the sole aim of freeing up funds for manufacturing activities at a very affordable cost (Gokmenoglu, Amin and Taspinar, 2015).

2.1 Theoretical Framework

The study considers the neoclassical economic growth theory very apt for its framework of analysis. This is because the theory identifies an increase in factor input and efficiency as principal sources of performance and output growth. In line with institutional and financial reforms, as well as other credit incentives and the provision of enabling business environment, are regarded as factors that could enhance technological progress to improve capacity utilization and increase output. The model that follows as specified by Ogbeide and Joshua (2016), assumes that the effect of financial sector development and other government incentives on the manufacturing sector passes through the technological progress factor in the production function. Institutional reforms are expected to enhance financial sector development to produce the needed administrative and management strategies that are required to increase efficiency so that overall performance can be achieved in the economy, including the manufacturing sector. More importantly, credit and other incentives are expected to provide the necessary support to procure other inputs meant to enhance and improve capacity utilization in the sector. In light of the above, the issue in the study is fitting the presumed dependent and independent variables into the formal production function. It is generally believed that the financial sector elements can be conveniently combined with other inputs to achieve acceptable production process.

2.2 Research Construct

The real sector of the economy is capable of inducing economic growth through employment generation and poverty alleviation in Nigeria, this is why its relationship with the financial sector must be strengthened to enjoy the full potential (Aiyetan and Aremo, 2015). It is believed that an improved manufacturing sector is a prerequisite for economic growth and development. Though non-availability of capital and other inputs have hindered the prospect of achieving the goals for some time now. The abysmal performance of the real sector has continued to manifest in low capacity utilization, low output and consequently low value-added. But the financial sector can promote growth in the sector through its efficient allocation of resources to the areas of need (Hill and Perez-Reyna, 2017; Ali and Hassan, 2008).

Mesagan et al (2018) reported in their study of financial development and manufacturing performance in Nigeria, that money supply and credit to the private sector as financial sector indicators, have continued to show an upward trend, especially from 2009 and beyond. However, such increases in the sector did not positively reflect on the indicators of the manufacturing sector as represented by capacity utilization, output and value-added. In their opinion, the heavy dependence of Nigerians on imported manufactured goods the fraudulent attitudes of most prominent business entrepreneurs were fully responsible for the development. They concluded that in spite of the efforts of the Central Bank of Nigeria (CBN) at reviving the financial sector through various banking reforms, the sector's impact on the performance of the manufacturing sector is still very insignificant.

In a related development, Ogunsakin (2014) notes that banks charge high-interest rates and collaterals on their short-term facilities and this makes them very unattractive to the manufacturers. According to Ukoha (2000), exchange rate supply has been another area of

problem to the manufacturers because most of the raw materials are sourced abroad and lack of access to favourable exchange rate has been one of the major factors that negatively affect firms' capacity utilization in the sector. Mesagan et al (2018) observe that poor financing generally, epileptic power supply, dilapidated and obsolete infrastructure, perennial security challenges, smuggling and massive importation of finished goods have been the bane of the manufacturing sector in Nigeria.

2.3 Empirical Review

Ehinomen and Oladipo (2012) examined the nexus between exchange rate management and the manufacturing sector performance in the Nigerian economy. The finding suggests that exchange rate appreciation, gross domestic product and inflation have a significant relationship with the productivity of the manufacturing sector. In another study carried out by Mojekwu and Iwuji (2012), it was found that adequate power supply enhances capacity utilization while inflation and interest rate spread have an adverse effect on it. Similarly, Usman and Adeyemi (2012) demonstrated in their study that the negative effect of interest rate on capacity utilization is robust to other interest rate variant, like real interest rate. In the same vein, Okwo, Mbajiaku and Ugwunta (2012) found equally that strong and positive relationship exists between manufacturing output growth and bank's credit to the private sector in Nigeria.

In a related study, Deb (2014) investigated the capacity utilization rate in the Indian manufacturing sector. The study revealed that the annual average capacity utilization was greater in the post-reform era than the pre-reform. Ductor and Grechyna (2015) examined the nexus among financial development, real sector output and the effect on economic growth, using panel data. It was shown by the scholars that growth in financial development has a long-run significant effect on net credit to the private sector in the economy. The study concludes that financial sector development enhances the performance of the manufacturing sector and consequently economic growth and development.

3.0 METHODOLOGY

3.1 Model Specification

In an attempt to capture the effect of financial sector development on manufacturing sector performance in Nigeria, cointegration and the associated error correction model mechanism (ECM) were deployed in the study. Thus the model for estimation is specified as follows:

$$MCUi = f(C,E) \qquad (1)$$

MCUi is the average manufacturing capacity utilization of all firms; C represents direct financial inputs, including the exchange rate supply and E represents indirect financial sector inputs such interest and inflation rates.

Equation (1) can be expanded to include the following:

$$MCUi = f(M2, CPS, INT, EXR, INF) \qquad (2)$$

Specifying econometrically for the purpose of regression analysis we have:

$$MCU = \beta o + \beta 1M2 + \beta 2CPS + \beta 3INT + \beta 4EXR + \beta 5INF + \mu t \quad (3)$$

Where:

βo =The intercept
βi's = The coefficients of the independent variables
μt = The Stochastic error term

MCUi = Manufacturing capacity utilization for the firms in the real sector of the economy

M2 = Money supply in the economy
CPS = Credit supply to the private sector
INT = Interest rate
EXR = Exchange rate
INF = Inflation rate

Equation (3) is also written in the following logarithmic form for linearity:

$$LNMCUi = \beta o + \beta 1LNM2 + \beta 2LNCPS + \beta 3LNINT + \beta 4LNEXR + \beta 5LNINF + \mu t \quad (4)$$

Table 3.1: Summary of the aPriori Expectation

S/N	Independent Variable	Dependent Variable	Expected Sign
1.	Money Supply	MCU	Positive
2.	Credit supply to private sector	MCU	Positive
3.	Interest rate	MCU	Negative
4.	Exchange rate	MCU	Positive
5.	Inflation rate	MCU	Negative

Source: Koutsoyiannies, A. (2001). Theory of Econometrics. Second Edition, New York: Palgrave Publishers.

Note: If estimates of the parameters of the model turn up with magnitude and signs that are not in conformity with theoretical expectations, they should be rejected unless there is a good reason to explain the violation.

3.2 The Analytical Techniques

Annual time series data used in the study were sourced from the Statistical Bulletin of the Central Bank of Nigeria (CBN) and the World Bank's World Development Indicators (WDI) 1985 to 2017. The method used in carrying out the estimation is multiple regression analysis through the ordinary Least Squares (OLS). This is because of its Best Linear Unbiased Estimate (BLUE). The software package is Econometric View (E-View 10). The significance level of t-values and F-Statistics were assessed at 0.05 level of significance.

3.3 Unit Root Test

Unit root test was carried out to determine stationarity of data and order of integration of each variable through the Augmented Dickey Fuller (ADF) test. The equation as given by Gujarat (2009) is as follows:

$$\Delta Yt = \beta 1 + \beta 2t + \delta Yt\text{-}1 + \Sigma \alpha i \Delta\, Yt\text{-}1 + \varepsilon t \qquad (5)$$

Where:

Yt = the relevant time series
Yt-1 = the residual time
εt = random error term

3.4 Cointegration Test

From econometric theory, two variables are conintegrated if the variable have long-run relationship. The tests, that were conducted in this section were the two-step residual based Engel-Granger (EG) and the Johansen Cointegration test to complement the EG test.

First, the regression equation (4) was estimated and we obtained the residuals and then used the ADF test to determine whether the residual is stationary at level form and if it is, we conclude that the variables are conintegrated. The equation is as follows:

$$Z_t=\sum_{(t=1)}^{m} [\![A_i Z_{(t-1)}]\!] \; [\![t-E]\!]_t \qquad (6)$$

Where:

Zt contains all n variables of the model and Et is a vector of random error. The model can be re-written in the form:

$$\Delta Z_t=\sum_{(t=1)}^{(m=1)} [\![\Gamma_i Z_t]\!] + [\![\Pi Z]\!]_{(t-m)} E_t \qquad (7)$$

Where:

$\Gamma i = -1 + A1 + \ldots + Ai$ (1 is a unit matrix)
$\Pi = -1(1 - Ai \ldots - Am)$

Also, Matrix Π can be represented in the following forms: $\Pi = \alpha.\beta$, where α and β are both nxr matrices. Matrix β is called cointegrating matrix whereas matrix α is referred to as the adjustment or feedback matrix. The Johansen method does not only provide direct estimates of the cointegrating vectors but also enables us to construct tests for the order or (rank) of cointegration, r and there can be at most r – N – 1 conintegrating vectors.

3.5 The Error Correction Model (ECM)

Error correction model is set up if all variables are cointegrated of the same order and if we find a cointegration relationship among them. The model is stated as follows:

$Yt = bo + b1Xt + \mu t$ (8)

Where:

Y = Manufacturing performance proxied by capacity utilization

X = The regressors (money supply, credit supply to private sector, interest rate, exchange rate and inflation rate)

μ = Error term (residual difference between observed and estimated values)

t = time

bo = Intercept

b1 = Slope of the coefficients which are the parameters to be estimated and they represent long-run coefficients

The error correction term must be negatively signed and significant to enable the necessary adjustment to short-run shocks towards its path to long-run equilibrium.

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Unit Root Test Result

The Augmented Dickey-Fuller (ADF) unit root test was performed allowing intercept and no trend with a maximum Lag of 4 based on Scharz Information Criterion (SIC) for optimal lag length. The results showed that all the chosen variables were non-stationary at their level state but were all stationary at their first differencing. Hence they were integrated at order one (1(1)). The integration of all the variables at the same order is an indication that there is the possibility that they are cointegrated or that there is a chance of a long-run relationship between the variables.

Table 4.1: Augmented Dickey-Fuller (ADF) Unit Root Result

S/N	Variables	ADF Statistic	Order of Integration
1.	LNMCU	-38.0376**	1(1)
2.	LNM_2	-6.8237**	1(1)
3.	LNCPS	-11.1541**	1(1)
4.	LNINT	-4.7165**	1(1)
5.	LNEXR	-4.8635**	1(1)
6.	LNINF	-5.8067**	1(1)

Note: ** Denotes rejection of the null hypothesis of unit root test
Source: Researcher's Computation Using E-View 10

The results of the unit root test obtained above-made way for the second stage of testing for cointegration of the variables.

4.2 Cointegration Test

It is a test for long-run relationships among the variables. The Engel-Granger (EG) residual-based and the Johansen reduced rank cointegration tests were carried out and the results are reported in Tables 4.1a and 4.1b respectively. It must be noted that EG approach is for a single equation while the Johansen approach is for a system of equations. Also, the EG test is based on estimating the static manufacturing capacity utilization function represented by equation (4) using OLS and generating the residual which we subjected to ADF unit root test. If by this testing, the residual is of order zero, 1(0), then there is a long-run relationship between MCU and the regressors. See Table 4.1a

Table 4.1a: ADF Unit Root Test of the Residual Null Hypothesis: RESIDOI has Unit Root

Variable	ADF Stat.	Order of Integration
RESIDOI	-4.37634**	1(0)

Note: **Denotes rejection of the null hypothesis of unit root at 0.05 level of significance
Source: Researcher's computation using E-View 10

The result above showed presence of long-run relationship between the dependent and independent variables since the ADF Statistics is statistically significant at 0.05 level of significance. Having confirmed the existence of cointegration or long-run relationship between the variables, the Johansen cointegration test was equally carried out to complement the EG test and the result is reported in Table 4.1b. The test was performed allowing a linear deterministic trend on a Lag interval of 1 to 3 in its specification.

Table 4.1b: Johansen Cointegration Test Results

Hypothesized No Cointegrating Eqns	Trace Statistic	(0.05) Critical Value	Maximum Eigen Statistic	(0.05) Critical Value
None*	401.6602	94.65364	157.9640	38.07654
At Most 1*	243.7854	68.72887	89.70745	32.87685
At Most 2*	145.8997	46.74614	83.53714	25.48432
At Most 3*	62.54168	28.78706	33.45021	23.14253
At Most 4*	30.10146	16.49573	22.76356	15.25461
At Most 5*	6.248901	4.849465	6.248901	4.840465

Note: Both Trace Statistic and Max-Eigen Statistic indicate 6 Cointegrating equations at the 5% level of significance

: *Denotes rejection of the null hypothesis of no cointegration

Source: Researcher's computation using E-View 10

Table 4.1b shows that both Trace test and Max-Eigen test indicate six (6) cointegrating equations at 0.05 level of significance both test-statistics rejected the null hypotheses for the six equations. Consequently, we concluded that there is a long-run relationship or cointegration between MCU and the explanatory variables. Thus indicating that deviation may occur in the short-run but equilibrium will hold in the long-run among the variables.

Table 4.2: Normalized Cointegrating Coefficients
Dependent Variables: LNMCU

Variable	LNM2	LNCPS	LNINT	LNEXR	LNINF
Coefficient	1.620511**	2.410765**	-2.564211**	2.671582**	-2.770218
Std. Error	0.10405	0.08456	0.13397	0.10531	0.02103
t-Statistic	15.25178	28.27975	-18.98746	28.95331	-11.52652

Note: **Indicates significant at 0.05 level significance
Source: Researcher's Computation using E-View 10

The above table presents the normalized cointegrating coefficients based on the Johansen procedure. The results showed that the chosen explanatory variables coefficients were individually statistically significant at 0.05 level of significance when we consider their t-values which were individually greater than the +1.960 critical values at the same 0.05 level of significance. The results show equally that the estimated coefficients conform to the theoretical expectations or apriori.

4.3 Error Correction Model Estimate (ECM)

The major concern of the ECM is to see how much the dependent variable in relation to the explanatory variables, can adjust to short-run shocks toward its part to long-run equilibrium. Thus, the error correction term (Lagged value of the residual from the Static MCU function) is of the essence since it measures the speed of adjustment. The error correction terms is expected to have a negative sign and statistically significant to ensure a strong convergence process to the long-run equilibrium.

Table 4.3:Parsimonious Error Correction Model Estimate
Dependent Variable: D(LNMCU)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.063157	0.008627	8.367202	0.0000
D(LNM2(-2))	0.038745	0.025698	2.573502	0.0120
D(LNM2(-3))	0.009742	0.010309	0.845563	0.3576
D(LNCPS)	0.006473	0.012356	0.492915	0.4621
D(LNINT)	0.003736	0.002014	1.850814	0.0726

D(LNINT(-1)	0.003935	0.003105	2.444825	0.0332
D(LNINT(-2))	0.004326	0.002768	2.511717	0.0247
D(LNINT(-3))	0.001231	0.002667	0.788347	0.3467
D(LNEXR)	-0.071018	0.023068	-3.663742	0.0011
D(LNEXR(-1)	-0.084708	0.020427	-3.760189	0.0021
D(LNEXR(-3)	0.049756	0.026784	2.416001	0.0352
D(INF(-1))	-0.000885	0.000525	-2.312238	0.0342
D(INF(-2))	0.000396	0.000289	0.865086	0.4654
D(INF(-3))	-0.001836	0.000407	-3.408732	0.0037
ECM(-1)	-0.512323	0.22750	-2.086562	0.0457
R^2	0.708746	Std. Error of regression		0.026763
Adjusted R^2	0.652964	Durbin Watson Stat.		1.455060
F-Statistic	4.956517			

Source: Researcher's Computation from E-View 10.

Table 4.3 shows the parsimonious ECM results. The parsimonious model estimates were from the over parameterized model through the general-to-specific method. The optimal lag length in the model is based on the automatic selection of the Schwaz Information Criterion (SIC), in the face of a maximum lag of 4. The results indicate that the coefficient of the error correction term is negatively signed as expected and it is also statistically significant at 0.05 level of significance. Note that a significant error correction term with a negative sign is an indication that there is a strong feedback effect of the manufacturing capacity utilization towards improved output from its long-run growth path.

The error correction term is -0.5123, which means that 51.23 percent of the discrepancies between the actual and equilibrium manufacturing capacity utilization is corrected in each period (annually) because we are using annual data for the analysis. The implication is that in an event of short-run disequilibrium, it can only take about one and a half years for the MCU to fully adjust to long-run equilibrium in the sector.

5.0 DISCUSSION OF FINDINGS

The ADF unit root result showed that variables were not stationary at their level state but they were stationary at their first differencing thus showing integration at order one (1(1)). In the same vein, the Engel-Granjer (EG) residual-based and the Johansen reduced rank cointegration tests revealed that there is a long-run relationship between manufacturing capacity utilization and the explanatory variables. However, the Johansen cointegration test which allowed for a linear deterministic trend on a lag interval of 1 to 3 in its specification, indicates that both Trace and Max. Eigen Statistics have 6 cointegrating equations which were also significant at 5% level of significance. Thus the null hypothesis of no cointegration was rejected. The implication is that deviation may occur but that is only temporary and in the short-run, because equilibrium will definitely hold in the long-run for the variables.

Furthermore, the result of the first test of hypothesis showed that money supply (M2) has a positive and significant effect on manufacturing capacity utilization (MCU) in the real sector. The result is in line with that of Mesagan et al (2018) when they found that money supply as

a percentage of GDP positively enhanced capacity utilization and output of the manufacturing sector in Nigeria. Similarly, the result of hypothesis two suggests that credit supply to the private sector positively and significantly affect the MCU and the result is consistent with the work of Okwo, Mbajiaku and Ugwunta (2012) when they found that strong and positive relationship exists between manufacturing output growth and bank's credit to the private sector in Nigeria. The implication or economic intuition of this is that the manufacturing sector needs adequate injection of funds to boost capacity utilization and increase output in the sector.

The result of the third test of the hypothesis shows that interest rate has a significant but negative effect on MCU in Nigeria. The result, once more, is in conformity with that of Usman and Adeyemi (2012) when they found that negative effect of interest rate on capacity utilization is robust. Interest rate is the price of capital and putting it at a high rate means that those who need capital for fresh investment or the expansion of existing one may not have access to it. Therefore its significance is an indication of how important it is in enhancing capacity utilization of the manufacturing sector. Equally interesting is the result of hypothesis four which showed that a positive and significant relationship exists between the exchange rate and MCU. The finding supports the work of Ehinomen and Oladipo (2012) when they found that exchange rate appreciation, gross domestic product and inflation have a significant effect on the productivity of the manufacturing sector in Nigeria. Most of the local firms in Nigeria depend on imported raw materials, capital equipment and other inputs in their production process and such importations are made via foreign exchange. It goes without the saying that the availability of foreign exchange at a reasonable rate will enhance firms' capacity utilization and increase output.

Finally, the result of the fifth test of hypothesis revealed a negative but significant effect of inflation rate on MCU. Iwuji and Mojekwu (2012) when they found from their work of factors that affect firms' capacity utilization, that inflation and interest rates have adverse effect on capacity utilization while adequate and regular power supply enhances capacity utilization. The implication of the result is that interest and inflation rates should be managed in such a way that they do not constitute problem to funding in the manufacturing sector of the economy.

6.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Summary of Findings

The ADF unit root test showed that variables were non-stationary at level state but they were stationary at first differencing, thus they were integrated at order one (1(1)). Both the EG and Johansen cointegration tests showed that a long-run relationship exists between the variables. Similarly, the normalized cointegrating coefficients showed that the coefficients were all significant at 0.05 level of significance and that they are correctly signed thus confirming they're a priori in the model. The error correction term was correctly signed too with a negative sign and it is equally statistically significant at 0.05 level of significance. The result showed also that there is a strong convergence process leading to long-run equilibrium. The coefficient of -0.5132 shows that 51.32 percent of the discrepancies between the actual and

the equilibrium MCU is corrected in each period (annually). Other specific findings are summarized below:

1. Money Supply (M2) has a positive and significant effect on firms' manufacturing capacity utilization in Nigeria.

2. Credit supply to the private sector has a significant and positive effect on firms' manufacturing capacity utilization in Nigeria.

3. Interest rate has a significant but negative effect on firms' manufacturing capacity utilization in Nigeria.

4. Exchange rate has a positive and significant effect on firms' manufacturing capacity utilization in Nigeria.

5. The relationship between a firm's manufacturing capacity utilization and electricity supply is positive and significant.

6.2 Conclusion

The study examined the effect of financial development on manufacturing performance in Nigeria, using manufacturing capacity utilization of firms in the sector as a proxy for manufacturing sector performance. The study revealed that all the chosen elements of financial sector development have a positive and significant relationship with the manufacturing capacity utilization with the exception of interest and inflation rates which though are significant but with a negative relationship. Thus, the implication is that improvement in money supply, credit supply to the private (manufacturing) sector, favourable exchange rate regime and its accessibility as well as low inflation and interest rates will enhance firms' manufacturing capacity utilizationand lead to increase in their output level so that the sector can contribute meaningfully to the gross domestic product (GDP) of Nigeria as obtains in other developing or emerging economies of the world.

6.3 Recommendations

From the findings and the conclusions drawn from them, the study recommends as follows:

1. There is a need to increase the money supply in the economy because it tends to support firms' capacity utilization and increase output in the economy.

2. The study shows that credit to the private sector positively and significantly enhanced capacity utilization of the manufacturing sector. There is therefore need to improve industrial funding by eliminating all bottlenecks that hinder access to credit in the sector.

3. Interest rate showed significant relationship but rather negative. Cost of capital is too high in Nigeria. It has to be reduced to give access and encourage manufacturers to opt for loans to boost their activities in the sector.

4. It is not a secret that many of the manufacturers still depend on imported raw materials and other inputs for their production activities. The high exchange rate is a great limitation. Therefore, there is need for a favourable exchange rate regime and it should be made accessible to the manufacturers to avoid harbouring unused installed capacity due to lack of raw materials.

5. Lastly, inflation rate was found to be significant but with a negative relationship just like the interest rate. That is, as it increases, capacity utilization and indeed output reduces. This underscores the need for the government to roll out monetary and fiscal policies that will keep the inflation rate as low as possible.

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