The Role of Manufacturing Sector in Nigeria's Economic Development

Olowu Josephine

Department of Sociology,
Bingham University Karu, Nasarawa State
olowujosephine@gmail.com

Ropheka Makpu

Department of Economics,
Bingham University Karu, Nasarawa State
rophekadan14@gmail.com

Anna D. B. Iyakwari

Department of Economics
Bingham University Karu, Nasarawa State
berlinlove37@yahoo.com

Abstract

Over time, the absence of locally sourced inputs has resulted in low industrialization. This is as a result of the near total neglect of agriculture which has denied many manufacturers their primary source of raw materials. Some constrains faced in this sector among others include; high interest rates, low patronage, unpredictable government policy. The paper thus, empirically examines the role of manufacturing sector in gearing economic growth in Nigeria from 1986-2014. Time series experimental research was adopted. Unit root test was carried out to test the stationarity levels of the variables before conducting the regression analysis to avoid spurious regression results. The co-integration results showed that long-run equilibrium relationship exist among the variables used for the analysis at 5% level of significance. The findings revealed that variations in demand are a significant driving force for variations in capacity utilization. The findings further showed that a percentage change in manufacturing output on average increases GDP by 0.04%. Suggestive from the analysis therefore is that there is need for provision of incentives for productive diversification through information externalities and co-ordination externalities. Also, there should be promotion of regionally integrated value chains and markets to enhance investment in manufacturing and other sectors to enhance industrial competitiveness and regional economic transformation.

Keywords: Manufacturing Capacity Utilization, Diversification, Economic growth, Nigeria

1. Introduction

It has been debated that the fastest way through which a nation can achieve sustainable economic growth is neither by the level of its endowed resources, nor its vast human resources, but technological innovation, enterprise development and industrial capacity (Olamade et al,

2014).Despite the vast oil wealth, the World Bank Development indicators (2014) has shown that majority of Nigerians are poor with 84.5% of the population living on less than two dollar a day on a survey conducted in 2010 up from 63.1% reported in 2004 survey. The issue of poverty can only be traced to mono-economic practice and underutilization of the nation's endowed resources, especially in manufacturing sector which could have opened up a lot of opportunities in job creation and economic growth.

The path to economic recovery and growth may require increasing production inputs; land, labour, capital and technology, and/or increasing their productivity (Kayode and Teriba, 1977). Increasing productivity should be the focus, because many other countries who have found themselves in the same predicaments have resolved them through productivity enhancement schemes. For instance, Japan from the end of the World War II and the United States of America from the 1970s have made high productivity the centre point of their economic planning and the results have been resounding. Also, middle income countries like Hong Kong, South Korea,Singapore and India have embraced boosting productivity schemes as an integral part of their national planning and today they have made significant landmarks into the world industrial markets. Also, another path to recovery requires an urgent rebuilding of deteriorated dilapidated infrastructure and making more goods and services available to the citizenry at affordable prices. This would imply a quantum leap in output of goods and services.

Given the importance of high productivity in boosting economic growth and the standards of living of the people, it is necessary to evaluate the productivity of the Nigerian manufacturing sector. This will be useful in ascertaining the relative efficiency of firms, sub-sectors and sectors. An in-depth knowledge of the relative efficiency of industries in relation to economic growth and development could go a long way to aid government in planning its programmes and policies, especially in deciding on which industries should be accorded priority. In the light of the foregoing, there cannot be a more appropriate time to evaluate the role of the Nigerian manufacturing sector in the economic growth and the development of the country than now.

The near total neglect of agriculture has denied many manufacturers and industries their primary source of raw materials. The absence of locally sourced inputs has resulted in low industrialization. Some of the constraints faced in this sector include; High interest rates, unpredictable government policies, Non-implementation of existing policies, lack of effective regulatory agencies, infrastructural inadequacies, dumping of cheap products, unfair tariff

regime, and low patronage. It is in the light of the foregoing that this study seeks to evaluate the role of the manufacturing sector in gearing economic growth in the Nigerian economy.

The broad objective of this study is to appraise critically, the role of the manufacturing sector in Nigerian economy. The specific objectives of the study include to:

i. Investigate the extent to which manufacturing sector output has contributed to the Nigeria economy;
ii. Determine whether there is significant relationship between Manufacturing sector capacity utilization and economic growth in Nigeria

The paper provided answers to the following questions:

i. To what extent has the Nigerian manufacturing sector output contributed to the of the growth Nigerian economy?
ii. What relationship exists between manufacturing sector capacity utilization and economic growth in Nigeria?

The hypothesis tested in the course of the analysis is stated below:

$H0_1$: Manufacturing sector output has not contributed significantly to growth of the Nigerian economy.

$H0_2$: Manufacturing sector capacity utilization and economic growth does not have significant relationship.

2.0. Literature Review

2.1 Manufacturing Sector and the Nigerian Economy

Historically, the growth in manufacturing output has been a key element in the successful transformation of most economies that have seen sustained rises in their per capita incomes. In most of Africa, performance in this area has been poor over the last decades. The lack of high-quality data constitutes a major impediment for rigorous policy relevant research on African industry, and the majority of previous economic research on Africa has therefore been based on aggregate data.

Opaluwa et al (2010) opine that the manufacturing sector plays catalytic role in a modern economy and has many dynamic benefits that are crucial for economic transformation. They noted that in an advanced country, the manufacturing sector is a leading sector in many respects;

it is an avenue for increasing productivity in relation to import substitution and export expansion, creating foreign exchange earning capacity, raising employment, promoting the growth of investment at a faster rate than any other sector of the economy, as well as wider and more efficient linkage among different sectors.

Obasan and Adediran (2010) argue that when industrialisation is compared to agriculture, the manufacturing sector offered special opportunities for capital accumulation. They explained that capital accumulation can be more easily realised in spatially concentrated manufacturing than in spatially dispersed agriculture. This is one of the reasons why the emergence of manufacturing has been so important in growth and development. Obasan and Adediran (2010) noted that the contribution of the manufacturing industries in the Nigerian economy cannot be over emphasized when considering its employment potentials and financial impacts on the economy. Apart from its role of building grounds for development by laying solid foundation for the economy, they argue that it also serve as import substituting industry and provide ready market for intermediate goods.

Al Awad M. (2010) adopted a newly developed panel cointegration techniques to study the role of manufacturing in non-oil economic growth of the Gulf Cooperation Council (GCC) countries and found that manufacturing is strongly linked to GCC non-oil economic growth over the long run, in the way that income and population are both important to stimulate manufacturing in the GCC, especially income. However, results for the short run demonstrate that manufacturing efforts in the GCC countries have no significant effects on stimulating the growth levels of real non-oil GDP and that government spending might not be effective in terms of deriving the growth of non-oil GDP or stimulating diversification efforts in the GCC countries over the sample period.

Loonet (1995) assessed the contribution of the manufacturing sector to the economic growth of Pakistan during the period of economic reform and liberalisation and found that although, the growth in large scale manufacturing output has not accelerated in recent years nor has its overall contribution to GDP growth increase, there is some evidence that the activity in the sector has begun to take on some of the classic characteristics associated with leading sectors. Loonet (1995) noted that this pattern of growth may be as a result of past government decisions to increased allocations to research and development or expanded funding of technical education.

Udah (2010) investigates the impact of industrial development and electricity supply on economic development in Nigeria from 1970 to 2008 using the endogenous growth model. The result of the causality tests was poor, suggesting that the contribution of the industrial sector to economic development was below the expectation. Udah attributed the poor causality to poor infrastructure especially electricity supply.

2.2 Theoretical Framework

2.2.1Theories of Manufacturing

The economic theory of production provides the analytical framework for most empirical research on productivity. At the core of the theory is the production function, which postulates a well-defined relationship between a vector of maximum producible outputs and a vector of factors of production. Historical analyses of total factor productivity change conceptualize it as the change in output level controlling for input levels, i.e., the vertical shift of the production function. Consequently, factor productivity has been given such labels as the "residual".

A number of studies have attempted to characterize productivity change as embracing technological advance, changing composition of the work force, investments in human capital, reallocation of resources from lower to higher productivity activities, and economies of scale (Nelson, 1981). To Nadiri (1970: 12), "productivity change is both the cause and the consequence of the evolution of dynamic forces operating in an economy - technical progress, accumulation of human and physical capital, enterprise and institutional arrangements".

Despite the confusion underlying the broad issue of productivity, the specific theme of trade policy and productivity growth has much more robust and clear-cut theoretical formulations underpinning it. One such theoretical construct is the x-efficiency argument. Development economists for a variety of reasons routinely argue that trade protection reduces industrial sector efficiency. In markets characterized by entry barriers, the absence of foreign competition allows domestic producers to enjoy monopoly power and excess profits. Consequently, these firms may fail to produce at minimum efficient scale (achieve "scale efficiency") and/or to get the maximum possible output from their input bundles (achieve "technical efficiency" or "x-efficiency").

This scenario is reversed when there is more liberalization and greater opening up to international competition. There is an implicit "challenge response" mechanism induced by competition, forcing domestic industries to adopt new technologies to reduce inefficiency and

generally to reduce costs wherever possible. According to this argument, export expansion is good and so too is import liberalization. While the policy of increasing imports may restrict the market for domestic goods, it also increases competition and hence induces greater efficiency (Nishimizu and Robinson, 1983).

Increasing returns formulation provides another line of argument common in the development literature. The contention here is that production costs will decline when markets are widened as a consequence of freer trade. Kaldor (1967) attributed this to the presence of scale economies; while Vedroom (1947) expressed it in terms of labour productivity (the phenomenon was subsequently called "Vedroom's law" after him). The argument is usually cast in terms of the benefits of expansion in demand through increased exports.

A third theoretical postulate linking trade and productivity is based on the literature on foreign exchange constraints. In developing countries, intermediate and capital goods imports are not readily substitutable with domestically produced goods. In a sense, these imported inputs embody technologies that are unavailable to domestic producers and can only be obtained through imports. Consequently, policies that curb the availability of such imports, or make them more expensive, will lead to poor productivity performance.

By contrast, policies that increase the availability of imported inputs or lower their cost (e.g., increased foreign aid or an export-led development strategy) will lead to cost reductions to domestic industries and hence to better productivity performance.

Technological catch-up models constitute another strand of the theoretical framework. Rodrik's (1988) work contains a framework in which the representative firm's rate of catch-up to international productivity levels depends positively on its market share. In his view, trade reforms would likely accelerate the transition to state-of-the-art technologies among exportables and decelerate the process among import competing sectors. Another formulation by Rodrik (1988) contends that one way domestic producers compete is through choice of technique. Hence, producers could tacitly collude when protected from foreign competition by failing to modernize their plants; trade liberalization may induce defection from the collusive equilibrium.

2.2.2 Theories of Growth

The classical theory of growth assigns to the rate of investment the responsibility for fostering for fostering growth, itself a function of share of profits in national income. A positive

relationship between both variable is deemed to exist hence higher rates of profit are deemed to result in higher rates of growth via its positive effect on the rate of investment.

Classical economists like Adam Smith, David Ricardo, and J.S Mill were the exponents of this theory of growth. In what could be best describe as a self limiting theory, they argued that the increased division of labour and hence specialization made possible by increase in growth rate of capital would result in increase in both profit and wages. However, an increase in both profit and wages would in turn trigger off population expansion which is the course of growth of capital and labour overtime would result in diminishing returns consequent upon the fixity of land. The setting in of diminishing returns would lead to a decline in investment and hence growth, thus bringing about a return of the economy to a stationary state. Thus the classical growth models such as the Ricardian growth model emphasized the limits to growth imposed by the ultimate scarcity of land. However, a major defect of this theory of growth is failure to provide for the possibility of the role of technical progress in growth (Anyanwu, 1995). Indeed, the astigmatic nature of the theory derives from its belief in the Maltusian Population theory and the possibility of the law of diminishing returns setting in the course of growth.

Rostow's theory of growth is a historical account of the process of economic growth. Rostow (1960) posited that all countries of necessity pass through five stages in the process of growth. These stages are

i. The traditional society characterized by economic decision making on the basis of custom, tradition and obligation.

ii. The precondition for takeoff stages, characterized by advance in agriculture and jettisoning of uneconomic culture as well as the emergence of an entrepreneurial class.

iii. The take off stage, characterized by increased rate of saving emergence of leading sectors which helps to pull along other sectors contributing thereby to the realization of sustained growth.

iv. The stage of drive to maturity characterized by the consolidation of industrial revolution. Moreover, within this stage, the stage, the other sectors catch up with the leading sectors and the economy, having attained the "critical minimum speed to be airborne in the growth process in stage three actually becomes airborne in this stage of growth.

v. The stages of high mass consumption. In this stage of growth, an economy is deemed to have matured, making it possible for the citizens to enjoy appreciable levels of living

standard. The more developed economies such as the US, the UK, the Netherlands, Germany, France, Sweden, Norway most likely fall under this stage of Rostow's five-stage classification.

2.3 Empirical Review on the Impact of Manufacturing Sector towards Economic Growth

Different studies have been conducted on manufacturing capacity utilization, its determinants and how it impacts growth in different economies of the world. However, a number of such studies have been selected as essential for elaborating research done in the area of manufacturing capacity utilization.

Corrado and Mattay (1997) researched on how manufacturing capacity utilization impacts on real growth, inflation, and short run costs. In their report on the United States Industrial Sector, they showed how capacity utilization can impact on economic growth using the non- parametric tool of correlation analysis. Their empirical findings were that a correlation of 0.9 existed between annual changes in the real output of goods and the index of capacity utilization for manufacturing. More importantly, they posted that movements in capacity utilization can be taken as stemming primarily from shocks to aggregate demand, which pushes the economy along an upward-sloping aggregate supply curve. They found that capacity utilization in the manufacturing sector was indicative of the cyclical state of overall aggregate demand and for this reason the predictive power factory operating rates for inflation had long endured. Most fluctuations in aggregate output came from changes in the demand for goods and new structures. In short, capacity utilization in manufacturing was found to be indicative of the fact that the final demand for services contributed little to overall business fluctuations.

Gajanan and Malhotra (2007), conducted a study on the measure of the capacity utilization and its determinants on the Indian economy between 1976 and 1996 and discovered that there were substantial variations in capacity utilization both across industries and overtime. Their conclusions and findings are worth flagging. They noted substantial variations in capacity utilization both across industries and overtime. In general they found that capacity utilization rates were higher in earlier time period, dropped in the mid 80s and started rising in the early 90s. They confirmed a standard deviation result that variations in demand are a significant driving force for variations in capacity utilization and found capacity utilization to be positively related to the magnitude of labour intensity in production. The capacity utilization of Indian firms were sensitive to all input prices except the price of labour, that is, other factors of

production like land and capital excluding labour. Their empirical results also indicated that traditional measures of capacity utilization such as minimal capital output ratio and peak – to – peak ratio are not appropriate proxies for the short run decision making of the firm regarding capacity utilization. This latter evidence is one of the contributions of the research to mainstream economics because they made it clear that minimal capacity output ratio and peak – to – peak ratio are long term proxies for decision making of a firm, thus they should not be confused with short term policy measures for capacity utilization.

Youn Kin (1999), who develop and estimated a model of economic capacity utilization and its determinants by allowing for the firm's full optimization behavour while considering the endogenous output choice is worth flagging. The model was used to derive the short run output supply function which generated optimal and capacity output. Optimal capacity utilization was determined as the ratio of optimal to capacity output. The evidence from U.S manufacturing showed that capital expansion not accompanied by market growth and higher materials and capital prices contributed to lower capacity utilization. The cost of acquiring energy (or energy price increase) had exerted a stimulating impact on capacity utilization. In conclusion, conventional capacity utilization measures were found to be biased and failed to capture the influences of changes in economic conditions facing firms. In the context of reviewed work, it noted that capital expansion not accompanied by market growth and higher materials and capital prices contributed to lower capacity utilization in the U.S manufacturing firms. Although the study did not cover the entire economy of the U. S it contributed immensely to the practice of capacity utilization measurement and what factors should be firmly considered if the manufacturing firm wants to raise capacity utilization growth so both should not be seen as trade-offs. Lecraw (1978) developed the factors which influence the capacity utilization decision of 200 firms in the light manufacturing sector of Thailand during the period 1962 to 1974. The profit maximizing capacity utilization rate for each firm was calculated using the projected balance sheets and income statement prepared by the firms at the time of their initial investment. Firm's optimal capacity to be roughly twice the capacity utilization rates chosen by firms meaning that there was excess capacity resulting in insufficient demand to warrant the expansion of output in the light industries. It is worth flagging that the manager's perceived risk of multi shift operations (Mr) has been criticized based on its weakness in influencing the capacity utilization of the firm growth theories of the firm suggest that managers desires commission and

other benefits so they are willing to increase the sales of the firm because their commission is also important. In increasing output there would be some degree of multi – shift operations so that his commission can be raised; but saying that the manager considers some risk implies that he is unable to raise the projected output that paves way for sales maximization and the raising of his commission.

James and Ragan (1979), investigated short term projections of manufacturing capacity utilization and used an equation linking growth in manufacturing output to growth in GNP and estimated additions to manufacturing capacity based on projections of investment. The model was then used to project capacity utilization from third –quarter of 1977 to fourth – quarter of 1978. Their results were that changes in capacity utilization from one period to the next depended positively on the volume of investment and negatively on the extent of depreciation which in turn depended on the level of capacity in the last period. As many economists have observed, investment accelerates as the volume of unused capital shrinks, that is, as the capacity utilization rises. Changes in investment were therefore specified to be a function of past changes in capacity utilization. The result showed estimates over the period 1954 to 1976. From the first equation, it was apparent that manufacturing output was more volatile than GNP, the large coefficient for GNP indicated that rapid GNP growth is on average accompanied by even GNP growth in manufacturing output. The coefficient of the second equation indicated that, in the absence of investment, capacity declines 3.35 percent, which was seen as the result of depreciation and obsolesce. Finally, equation three indicated how investment accelerates as capacity utilization rises. The goodness of fit of all three equations was good and all coefficients were statistically significant from zero.

3. Research Methodology

Research design basically provides an outline of how the research will be carried out and the methods that will be used. It includes an abstract of the research study, descriptors of the research design, dependent and independent variables, the assumptions and limitations of the research, research question hierarchy, sampling design and a format for the experimental data showing how data will be presented. The research design adopted for this work is the times series experimental research design. The reason is that times series experimental research design combines the theoretical exposition with empirical observation.

The ordinary least square (OLS) linear regression model was used to estimate the variables. This involves estimation of the model in order to examine the impact of manufacturing sector on economic growth in Nigeria. The linear estimation technique aims at achieving unique parameter estimates that would enable us to interpret the regression coefficients and consequently give a slightly better fit. Unit root test shall be conducted on the variables using the Augmented Dickey Fuller (ADF) test. Unit root test is a test of stationary or non-stationary of time series data used in the model. This is to find out if the relationship between economic variables is spurious or nonsensical. The estimation was conducted using the econometric computer software package, E-Views version 7.0.

Taking inference from the empirical findings and theories, which has been derived from the theoretical exposition of the Cobb Douglas production function theory and then making production central to the equation, a model will be drawn up to determine economic growth in Nigeria context.The theoretical model for this study is the conventional neo-classical one-sector aggregate production model drawn from the mainstream theory of growth, A more comprehensive methodology that avoids the ad hoc selection of additional variables can be found in the manufacturing production function approach proposed by Gajanan and Malhotra (2007), which models GDP as a function of manufacturing sector variables- MO and MCU. The model is expressed as:

$$GDP = f(MO, MCU) \text{----------} 1$$

Thus, linearizing equation (1), we obtain:

$$GDP = \beta_0 + \beta_1 MO + \beta_2 MCU + \mu_t \text{----------} 2$$

Where;

β_0 = The intercept or autonomous parameter estimate

β_1 to β_2 are the slope of the coefficients of the independent variables to be determined

MC= Manufacturing outputs

MCU= Manufacturing capacity utilization

GDP= Gross domestic product

The Unit root test for stationarity of the time series data is prior to the estimation of the model, performed prior to model estimation using the Augmented Dickey Fuller (ADF) tests.

μ = Error term (or stochastic term)

4. Result and Discussion

4.1 Pre-estimation Diagnostics Test

4.2.1 Unit Root Test

As is the case with similar studies, the Augmented Dickey-Fuller (ADF) test was used to ascertain whether the four variables of the study exhibit unit root property. This is to find out if the relationship between economic variables is spurious or nonsensical.

Table 4.2.1: Summary of Unit Root Test Results

Variables	ADF Test Statistic(at first difference)	Order of Integration
GDP	-6.438582(-4.374307)*	*I(1)*
MCU	-5.096853(-3.959026)**	*I(1)*
MO	-7.014429(-3.612199)**	*I(1)*

Source: Authors Computation, 2016 (Eview-7)

From the table 4.2.1 above, it was discovered that all the variables used in the analysis were found stationary at first difference. MCU and MO were found stationary at 5% level; while GDP was found stationary at 1% level. These first difference variables (stationary variables) shall be used for further analysis in computing and analysing of our results. The next specification test that shall be computed is the co-integration test of these variables.

4.3. Co-integration Estimate

If two or more time series are not stationary, it is important to test whether there is a linear combination of them that is stationary. Economically, variables are co-integrated if they have a long term, or equilibrium relationship between them. It is a pre-test to avoid spurious regression situations. Since the variables were found to stationary at first difference (that is at order 1(I)), it was safe for us to employ and proceed with Philips-Ouliaris co-integration test.

The Philips-Ouliaris co-integration test showed that long-run relationship exists among the variables at 5% level of significance.

Table 4.3.2: Philips-Ouliaris Co-integration Test Results

Date: 01/30/17 Time: 15:36
Series: GDP MO MCU
Sample: 1986 2014
Included observations: 29
Null hypothesis: Series are not cointegrated

Cointegrating equation deterministics: C

Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth)

No d.f. adjustment for variances

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
GDP	-0.934018	0.9708	-3.038515	0.9617
MO	-1.823764	0.8059	-4.595339	0.9049
MCU	-1.747842	0.8313	-6.048720	0.8228

*MacKinnon (1996) p-values.

Intermediate Results:

	GDP	MO	MCU
Rho – 1	-0.048391	-0.128830	-0.118806
Bias corrected Rho - 1 (Rho* - 1)	-0.108518	-0.164119	-0.216026
Rho* S.E.	0.116185	0.089989	0.123596
Residual variance	4.03E+13	2.55E+09	12.07792
Long-run residual variance	5.91E+13	3.70E+09	22.14464
Long-run residual autocovariance	9.40E+12	5.75E+08	5.033358
Bandwidth	NA	NA	NA
Number of observations	28	28	28
Number of stochastic trends**	3	3	3

**Number of stochastic trends in asymptotic distribution

Source: Authors Computation, 2016 (Eview-7.0)

4.4 Statistical Test of Hypothesis

The three hypotheses formulated in this study were tested using student t-statistics. The level of significance for the study is 5%, for a two tailed test. The decision rule is that we shall accept the null hypothesis if the critical/t-value (±1.96) is greater than the calculated value, otherwise reject the null hypothesis. That is, using the student *t*-test (*t*-statistic), we say that a variable is statistically significant if t^* (*t*-calculated) is greater than the tabulated value of ±1.96 under 95% (or 5%) confidence levels and it is statistically insignificant if the t^* is less than the tabulated value of ±1.96 under 95 %(or 5%) confidence levels. Thus;

$\mathbf{H_0}$: $\beta_0 = 0$ (Null hypothesis)

$\mathbf{H_1}$: $\beta_1 \neq 0$ (Alternative hypothesis)

4.4.1 Hypothesis One

$H0_1$: Manufacturing sector output has not contributed significantly to growth of the Nigerian economy.

From the regression result in table 4.4.1, the calculated t-value for MO is 21.17 and the tabulated value is 1.96, it therefore falls in the rejection region and hence, we reject the null hypothesis. The conclusion is that manufacturing sector output has contributed significantly to growth of the Nigerian economy.

4.4.2 Hypothesis Two

$H0_2$: Manufacturing sector capacity utilization and economic growth does not have significant relationship

The regression result in table 4.4.1 also showed that the calculated t-value for MCU is 6.58 and it's greater than the tabulated value of 1.96; and thus falls in the rejection region. Hence, we may reject the null hypothesis. The conclusion is that Manufacturing sector capacity utilization and economic growth have significant relationship

4.5. Discussion of Research Findings

The parameter estimate of the Manufacturing output (MO) showed that it relates positively with GDP and was found statistically significant. It shows that the higher the manufacturing outputs, the higher the rate at which the GDP grows. This is in agreement with James and Ragan (1979) who investigated short term projections of manufacturing capacity utilization and used an equation linking growth in manufacturing output to growth in GNP. Their results were that changes in capacity utilization from one period to the next depended positively on the volume of investment and negatively on the extent of depreciation which in turn depended on the level of capacity in the last period The function thus shows that a one percentage change in manufacturing output, on the average, increased the GDP by 1.91percent between 1986 and 2016.

Finally, the parameter estimate for MCU was found to be positively related to GDP. It further showed that MCU also has a significant relationship with economic growth in Nigeria. This is in-line with the findings of Gajanan and Malhotra (2007) whose results showed that that there were substantial variations in capacity utilization both across industries and overtime which had

enhanced the growth of their country's GDP. They confirmed a standard deviation result that variations in demand are a significant driving force for variations in capacity utilization and found capacity utilization to be positively related to the magnitude of labour intensity in production. The function thus shows that a one percentage change in manufacturing output, on the average, increased the GDP by 0.04percent between 1986 and 2014.

5. Conclusion and Recommendation

However, while manufacturing might be the most dynamic sector, the study argues that industrial policy should not focus on specific sectors but rather continuously search for new and most profitable activities for productive diversification in manufacturing, agriculture or services. Instead of concentrating on outcomes, effective industrial policy should endeavor to create a process that ensures continuous collaboration between the private sector and the government to identify constrains and remedies to structural transformation. Strategies to accelerate and sustain long-term growth in Nigeria should go beyond national boundaries. Promoting regionally integrated value chains and markets can be a powerful tool for the continent to widen the scope of profitable investment opportunities, increase productivity through scale economies and enhance international competitiveness.

Based on the findings, the following recommendations are made:

i. Providing incentives for productive diversification by addressing information externalities and coordination externalities. Information externalities arise because new activities that might be profitable in the future are often not feasible based on existing information. The promotion of such activities requires government support through research and development, selective taxation, financing, regulation etc. Coordination failures necessitate active industrial policy because many projects require large-scale investments to be made in order to be feasible.

ii. Promoting regionally integrated value chains and markets to enhance investment in manufacturing and other sectors to enhance industrial competitiveness and regional economic transformation.

References

Adekoya, A. (1987). The Role of Government in Promoting Increased Productivity on Nigerian Farms. Proceeding of the First National Conference on Productivity. Ibadan: University Press, 56.

Adeola, F. A. (2005). Productivity performance in developing countries: Case study of Nigeria. United Nation Industrial Development Organization (UNIDO) Report.

Adesina, A. O. (1992). Productivity trends in Nigeria. Seminar Paper. Department of Economics, University of Ibadan.

Akinlo, E. A. (1996). Improving the Performance of the Nigerian Manufacturing Sub-Sector after Adjustment. The Nigerian Journal of Economic and Social Studies, 5(9).

Al Awad, M. (2010). The Role of Manufacturing in Promoting Sustainable Economic Growth in the GCC. Institute for Social and Economic Research Working Paper. No. 4, pp. 1-23.

Alao, R. O. (2010). Productivity in the Nigerian Manufacturing Sub-Sector: Error Correction Model (ECM). European Journal of Economics, Finance and Administrative Sciences. Issue 20, 25-34.

Bergsman, J. (1991). Commercial policy, allocative efficiency and X-efficiency. Quarterly Journal of Economics. 88.409 - 433.

Central Bank of Nigeria (2010).Statistical Bulletin. Abuja: Central Bank of Nigeria.

Central Bank of Nigeria (2011).Statement of Accounts and Annual Reports. Abuja: Central Bank of Nigeria.

Central Bank of Nigeria (2014).Statistical Bulletin. Abuja: Central Bank of Nigeria.

Condon, T., Corbo, V. & Melo, J. D. (1985). Productivity growth, external shocks and capital inflow in Chile 1977–81: A general equilibrium analysis. The Journal of Policy Modeling. pp. 329–406.

Corbo, V. & Melo, J. E. (1985). Scrambling for survival: How firms adjusted to recent reforms in the Southern Cone. World Bank.

Corrado & Joe, Mattey. (1997). Capacity Utilization. Journal of Economic Perspectives, vol. 11, No. 1 (winter), pp. 151-167.

Edwards, S. (1989). Openness, Outward Orientation, Trade liberalization & Economic Performance in Developing Countries. PPR Working Paper. No. 199, World Bank, June.

Havrylyshyn, O. (1990). Trade Policy and Productivity Gains in Developing Countries: A survey of the Literature. The World Bank Research Observer, 1–24.

Kaldor, N. (1967). Strategic Factors in Economic Development. New York: W.F. Humphrey Press.

Kayode, M. O. & Teriba, O. (1977).Industrial Development in Nigeria. Ibadan: University Press.

Krueger, A. O. & Tuncer, B. (1982).An empirical test of the infant industry argument. World Bank Reprint Series. No 284, December.

Ku, H., Mustapha, U. M. & Goh, S. (2010). A Literature Review of Past and Present Performance of Nigerian Manufacturing Sector. Journal of Engineering Manufacture. 224(12) 1894-1904.

Donald, J. Lecraw. (1978). Determinants of Capacity Utilization by firms in Less Developed Countries. Journal of Development Economics. Vol. 5, pp. 139-153.

Nadiri, M. I. (1970). Some approaches to the Theory and Measurement of Total Factor Productivity: A survey. Journal of Economic Literature. Vol. 8, no. 4, pp.1137–1177.

Nadiri, M. I. (1972). Review of Income and Wealth. International Studies of Factor Inputs and Total Factor Productivity: A brief survey, pp.194- 254.

Nelson, R. R. (1981). Research on Productivity Growth and Differences. Journal of Economic Literature. Vol. 14, no. 3, pp.1029–1064.

Nishimizu, M. & Robinson, S. (1983). Trade Policies and Productivity change in Semi industrialized Countries. Development Research Paper. World Bank, March.

Obasan, K. A. & Adediran, O. A. (2010).The Role of Industrial Sector in the Economic Development of Nigeria.. Journal of Management and Society.1 (2), 9-16.

Olaoye, A. O. (1985). Total factor productivity trends in Nigerian manufacturing. Nigerian Journal of Economic and Social Studies.27, 12-34.

Opaluwa, D., Umeh, J. C. & Ameh, A. A. (2010).The effect of exchange rate fluctuations on the Nigerian Manufacturing Sector. African Journal of Business Management.4(14), 2994-2998.

Pack, H. (1988). Handbook of Development Economics. Industrialization and Trade. In: H. Chenery and T.N. Srinivasan, eds., B.V. Elsevier Science Publishers.

Pitt, M. M. & Lee, L. F. (1981).The measurement and sources of technical inefficiency in the Indonesian Weaving Industry.Journal of Development Economics. 9,. 43–64.

Rodrik, D. (1988). Trade Policy Industrialization and Development. Imperfect Competition, Scale economies and Trade Policy in Developing Countries. In: R. Baldwin, ed., New Perspectives.