Manufacturing Sector and Import Dependence in Nigeria

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***Abstract*: This study uses secondary data to examine the relationship between the manufacturing sector and import dependence in Nigeria, paying particular attention to the effects of imported intermediate, capital, and manufactured goods (herein referred to as import dependence) on the performance indicators of the manufacturing sector (such as manufacturing output growth, capacity utilization, value added, employment rate, and export adopted in the study). Error Correction Mechanism (ECM) was used to provide empirical evidence for the relationship between manufacturing sector performance (dependent variable) and import dependence. The study adopted Augmented Dicky-Fuller (ADF) for unit root test analysis, Autoregressive Distributed Lag (ARDL) bounds test for cointegration test analysis, and (independent variable). Evidence of a long-term association between the performance of the manufacturing sector was found by the ARDL bounds cointegration test.It was discovered from the empirical findings among others that only import of capital contributed positively to all indicators of manufacturing sector performance adopted in the study. Based on the findings, the study recommends that government should adopt import substitution strategy and make import only for capital and partially for intermediate goods that cannot be produced domestically, while, the importation of manufacutured goods should be discouraged at all cost in Nigeria. Thus conclude that on the average Nigeria's manufacturing sector is surrounded with doubting benefits and may not be good enough to set economic growth and developmental platform required in the economy.**

***Keywords*: Economic Growth, Import dependence, Manufacturing Sector**

I. INTRODUCTION

1.1 Background to the Study

Raw materials can be transformed or converted from one state to another during the manufacturing process (Ndebbio&Ekpo, 1991). It consists of components used in the physical or chemical synthesis of new products from raw materials, substances, or component parts (International Standard Industrial Classification). Nigeria's manufacturing industry is made up of major, medium-sized, small, and micro firms (CBN, 2013). Performance of the manufacturing sector is a broad term, but it entails thinking about or looking at the growth, success, or failure rate of some performance indicators. Manufacturing output growth, average capacity utilization, manufacturing value added, manufacturing employment rate (MEMP), and manufacturing exports are among the manufacturing sector performance metrics that CBN (2013) tracks in Nigeria. Effective manufacturing sector performance is essential to every economy's survival.Manufacturing sector performance is a broad concept; however, it involves the ideas or examination of the manufacturing sector growth, success or failure rate of some performance indicators. CBN, (2013) captures manufacturing sector performance indicators in Nigeria to include manufacturing output growth, manufacturing average capacity utilization, manufacturing value added, manufacturing employment rate (MEMP), and the manufacturing exports. In every economy, effective manufacturing sector performance services as a life wire to both sectoral and aggregate economic growth and development because it provides employment, income and promotes exports. Activities in the manufacturing sector cuts acrossmining, oil and gas exploration and production; petroleum refining; chemical, petrochemical, and pharmaceutical production; pulp and paper; agricultural production; food processing; electronics and home appliances etc (Sustainable Development Indicator Group SDIG, 1996). It is desirable for the country to achieve robust manufacturing sector associated with growth in output, high value-chained products, greater linkages in the economy, a wider employment base, rising incomes and growing exports diversification, but reverse is the case in Nigeria.

An economic indicator that gauges actual production is the output of the manufacturing sector. This indicates that the ratio of output to input over time is being measured. It is recognised in the literature that a variety of factors, such as energy consumption, credit to the private sector, investment, and nominal exchange rate, influence manufacturing sector output (CBN, 2013, NIRP, 2014, Anyanwu, 2017, Ekpo, 2017, and Adekoya. 2018). According to the research, structural and business environment elements are a sine qua non for the expansion of Nigeria's manufacturing sector output. Energy costs on the structural side and competition in the commercial environment are the major restrictions (Adekoya, 2018). Structures and enablers such as those listed by NIRP (2014) (infrastructure, technology base, skills (technical and vocational skills), innovation, investment climate, low finished goods standards for export, local patronage, finance, and high cost of funding) are also important drivers. These enablers all claim to be competitive.

A quick glance at Nigeria's manufacturing production reveals evidence of a low contribution of output to GDP, which can be attributable to some of the aforementioned main causes. For instance, rising expenses are a result of systemic infrastructure problems, primarily those involving power and transportation.The important of manufacturing value added for measuring manufacturing sector performance cannot be overemphasized. First, manufacturing when it is labor-intensive and export-focused would increasingly added value to commodities before they are sold; boosts revenues, as well as raises average earnings per input (Anyanwu2017). Second, manufacturing is primarily for the expansion of the productive capacity of the economy to produce more goods and services, promotes value chain and generate employment in a country (Ekpo, 2014). From the outlook of above roles, low manufacturing share also suffices in terms of manufacturing value added (MVAD), and data evidence show that MVAD has been consistently below 10% in Nigeria from 1970 to 2020 (World Bank 2020). Comparing the statistics with rest of the world, for example in 2018, the annual % growth of manufacturing value added (MVAD) account for 29% in China, Thailand (27%), Malaysia (22%), Indonesia (20%), Cameroun (15%), Benin (12%), South Africa (12%), Ghana (11%), and Nigeria (8.7%) (World Bank, 2020). The Asian and Pacific regions have been the biggest manufacturing regions in the world, driven by China (Stiglitz, 2017). The share of African's manufacturing value added (MVAD) was 16% in 2017 compared with Asia and Pacific that accounted for 25% in same period (Stiglitz, 2017). In fact, Nigeria has been reliance on primary commodities export which essentially have limiting economic activities to the bottom of the value-chain pyramid (NIRP, 2014). Thereforethe economic and social costs of the above situation in Nigeria have been quite substantial. However, the health of an economy is influenced by how well the manufacturing sector performs, particularly by changes in manufacturing employment (Klissen&Tatoma, 2013). In Nigeria, manufacturing employment has historically represented a small percentage of overall employment, with figures of 4.8% between 1981 and 1985, 4.1% between 1991 and 1995, 3.4% between 2001 and 2005, and less than 6% between 2016 and 2019. (World Bank, 2019). This demonstrates unequivocally how little employment is being created in the industry (World Bank, 2019). Without a manufacturing sector, a nation's economy cannot advance, there won't be enough employment generated, and salaries might not increase.

1.2 Statement of the Problem

Both policy makers and development economists have been interested in the role that the manufacturing sector plays in the development process. However, research indicates that a variety of factors, including import reliance, export, energy consumption, infrastructure, credit to the private sector, technology, human capital, investment, policy and institutional factors, interest rate, exchange rate, security, to name a few, are what drive production in Nigeria's manufacturing sector. The majority of these factors are structural problems like import, export, policy, institutional issues, etc., while others are problems with the business environment like energy costs, infrastructure, capital, human capital, etc., which are essential for driving the output and performance of the manufacturing sector. The characteristics of Nigeria's industrial sector's performance show the extent of the country's import dependency, which indicates the tremendous.The more alarming is the fact that the economic and social costs of import dependence with respect to intermediate, capital and consumer goods in the country is quite substantial. According to the 2016 Trade and Development Report, the strength of the investment push and the creation of production, employment, income, and knowledge links are key factors in industrialization (manufacturing sector) processes. Evidently, as exports of emerging nations like Nigeria grow, so do their imports, as a result of their need on capital and intermediate commodities. This circumstance results in a deficit in international trade, which is a persistent issue for developing countries' foreign trade regardless of the export value (Erdoan, 2015). Imports play a significant role in the global value chain and supply chain of the industrial sector. Furthermore, the performance of the manufacturing sector in terms of output, capacity utilization, value added, employment, export, and their expansion depends significantly on imported intermediate and capital goods. According to Egwaikhide (2000), unless policy makers know what the major components of imports are and how they are determined, such a policy decision can be harmful to investment and output if domestic production relies on imports.

1.3 Research Questions

Following the statement of the problems, the research questions are as follows:

1. What is the impact of import dependence on manufacturing sector output growth in Nigeria?
2. What impact hasimport dependence on manufacturing sector capacity utilization in Nigeria?

1.4 Objectives of the Study

In line with the statement of the problems and the research questions, the general objective of the study is to examine the impact of import dependence on manufacturing sector performance indicators in Nigeria. Specifically, the study aims to:

1. Empirically investigate the impact of import dependence on output of manufacturing sector in Nigeria.
2. Empirically analyze the impact of import dependence on capacity utilization of manufacturing sector in Nigeria.

1.5 Research Hypotheses

The research hypotheses of the study follows the import dependency theory, hence the hypotheses are stated thus;

Hypothesis one

H_0 import dependence do not significantly hinder manufacturing sector output growth in Nigeria.

Hypothesis two

H_0: import dependence do not significantly deter manufacturing sector capacity utilization in Nigeria.

1.6 Significance of the Study

The study is significant because it focused on a topic that was rarely explored in the literature, namely the relationship between Nigeria's manufacturing sector performance and trade openness. Other topics included the factors that influence manufacturing sector productivity and trade liberalization. However, the study under consideration switched its focus to manufacturing sector and import dependence in Nigeria (with regard to imported intermediate, capital, and produced goods) (with respect to performance indicators such as output growth, capacity utilization, value added, employment rate, and export). Five variables are examined in this study, including the expansion of industrial production, capacity use, value added, employment, and export. These manufacturing sector performance indicators were developed to help comprehend the different structural, commercial environment, and macroeconomic elements that help or hinder the sector's development.

II. LITERATURE REVIEW

2.1 Manufacturing Sector Performance

Raw materials must be transformed into completed consumer goods, intermediate goods, or producer goods during the manufacturing process. Manufacturing is also the process of converting raw materials into (a) consumer goods, (b) new capital goods that enable the production of more consumer goods (including food) with the same amount of labor, and (c) social overhead capital that, in conjunction with human resources, creates new services for both individuals and businesses (Ekpo, 2005). It is impossible to overstate the importance of the manufacturing industry. Like other industrial pursuits, manufacturing helps to diversify the economy, enhance GDP, and increase foreign exchange profits while also opening up employment opportunities. Additionally, it promotes the use of local labor. Furthermore, minimizes the risk of overdependence on foreign trade and leads to the fullest utilization of available resources. It is one of the key elements of a development strategy in developing countries (Stiglitz, 2017). Anyanwu, OyefusiOaihenan and Dimowo, (1997) assert that the main instrument of rapid growth, structural change and self-sufficiency of a country lies in the manufacturing industry. It has been observed that only a few countries have developed their economies without developing a strong manufacturing base (Chang, Andreoni& Kuna, 2013; Chang, 2014, and United Nations Economic Commission for AfricaUNECA, 2011).

2.2 Import Dependence

Import dependence is primarily concerned with economic dependence of poor countries over the more advanced rich countries of the world for industrial development and livelihood. The term import dependence of an economy tells the extent such an economy survives on import. Ideally, most developing economy depends on more developed economy for capital goods to enable her produce intermediate and consumer goods for their livelihood and industrialization. For instance, most third world countries, including Nigeria, are underdeveloped, and thus, depend on developed countries for the production of goods through the importation of strategic raw materials (intermediate goods) and capital goods like production equipment, computers, etc. On account of this, import dependence can be regarded as the degree of a country's dependence on another country for capital goods, manufactured goods and services to enable the dependent country produce intermediate goods for industrial production and consumer goods for their livelihood (Egwaikhide, 2000).Most scholars assert that imports enhance productivity efficiency through transfer of modern technologies embodied in both the imported manufactured and capital goods to the benefit of domestic economy (Lawrence & Weinstein, 1999; Egwaikhide, 2000). More so, development economists recognized that foreign capital and other inputs are essential in the process of industrialization (manufacturing), and thus economic growth (Jiranyalkul, 2012). Kruger (1983) affirms that a decrease in imports of capital goods will reduce the manufacturing growth rate. Klissen andTatoma (2013) however recognized that faster growth of real goods imports are associated with faster growth of real manufacturing output (a positive sign), it could also be true that faster growth of real goods imports reflects a substitution away from domestic manufactured goods. Thus, in theory, the sign could be negative. Ngene, Nwele, andUduimoh (2016) assert that the imports of manufactured goods in the economy have significant effect on domestic manufacturing sector performance. Other scholars like Dulleckand Foster (2007) emphasized the role of human capital in manufacturing and found a negative relationship between imports of capital goods and growth for countries with lowest level of human capital. The positive relationship was minimal in countries with low level of human capital. Imported capital goods enhance technological capability through exports of high value added goods that requires modern technology (Tambunan, 2009). With the above assertions, manufacturing sector is, therefore, not something to toy with.

2.3 Empirical Literature

Oloumifemi, Obamunyi and Adekunju (2013) conducted a study on manufacturing performance in Nigeria; implication for sustainable development between 1980 and 2008 using panel data analysis. The study focused on following specific objectives (i) to look at the growth rate and contribution of manufacturing to GDP, (ii) to examine trend in both manufacturing and employment, (iii) to determine the

structure of capacity utilization and(iv) to determine factors influencing manufacturing performance. The results indicate positive relationship between manufacturing and each of capacity utilization and import. However, there is a negative relationship between manufacturing and each of investment, exchange rate, and export. The study further revealed that investment, capacity utilization and import were major determinants of manufacturing performance for the period. The study suggests that the key to reversing the poor performance of Nigerian manufacturing is to provide incentives for firms to become more export oriented. As an improvement on the study however, this study shall utilize the OLS technique for model analysis. This study will serve as an update by expanding the scope to also cover manufacturing sector activities between 2009 and 2019.

Ekpo, (2014) explored the industrial policies and the performance of industrial sector in Nigeria. The findings of the study show that the policies, identified as ISI, EPI and FPII, have not helped Nigeria to attain the required level of industrialization that can produce dynamic change in the economic structure of the country and the performance of industrial sector, especially, manufacturing had been below expectation. The policies have a common feature of foreign inputs reliance which makes their successful implementation in Nigeria very costly. This study primarily focused on industrial policies which is completely different from the current study that focused on the examination of the connection between import dependence and key manufacturing sector performance indicators in Nigeria.

Ebong, Udo and Obafemi (2014) analyzed the influence of globalization on industrial development in Nigeria over a period of five decades (1960-2010). Based on the Engle-Granger two-step and Johansen Cointegration tests, the Vector Auto regressions technique was used within an error correction framework. Results clearly showed that globalization had significant impacts on industrial development in Nigeria. Specifically, trade openness had a positive influence on industrial development. This suggested that increasing the level of trade with the rest of the world would create opportunities to export local raw materials and import necessary inputs into the industrial process. In contrast, financial liberalization adversely impacted on industrial development. The study recommended that policies were required to reverse the tide of capital flight from the country and direct resources towards developing the country's industrial sector.

Ekpo (2015) in a study of Nigeria's manufacturing sector performance, its challenges and prospects with the aim of providing a clearer insight into the current state of the sector. This study employed descriptive analysis approach and gathers data largely from secondary sources. The findings show that manufacturing sector's performance in Nigeria is unsatisfactory. The study affirms that current manufacturing sector's performance is low compared to the performance levels obtained in the 1970s. One of the notable features of Nigeria's manufacturing sector is high cost of production; low size of output, competitiveness of the product and the returns to investments is strongly tight to foreign exchange availability and foreign exchange rate in the country. The challenges which had impeded the performance of manufacturing sector identified in the study include inadequate foreign exchange and high exchange rate, infrastructural deficit, inadequate access to credit, high interest rate and inflation rate, multiple taxes and levies, insufficient demand and institutional inefficiency.The study recommended that the monetary policy of the country should be fine-tuned to ensure relative stable foreign exchange rate, low interest rate and single digit inflation rate; agricultural resources of the country should be fully exploited and utilized to ensure high agricultural output for export and provision of raw material to agro-based industries which produce for export to generate substantial foreign exchange for use in the manufacturing sector among others. In a bid to fill the knowledge gap, the current shall view the key factors that measures manufacturing sector indicators with respect to import dependence in Nigeria.

Obodo (2016) examined the impact of selected macroeconomic variables on manufacturing productivity (1981-2013) in Nigeria using the OLS method of analysis. Findings of the study showed that foreign direct investment (FDI) exert a negative impact on manufacturing productivity. Government spending has a positive impact on manufacturing productivity but its impact is relatively very small. Findings reported evidence of the importance of interest rate, exchange rate and consumer price index for determining manufacturing productivity in Nigeria. The study therefore suggested that foreign direct investment should be attracted to the manufacturing sector through monetary measures (interest rate reduction) in order to grow the economy. This study neglected the policy and institutional factors hence need to be captured and as well extend the scope to cover manufacturing activity in 2019. To fill the knowledge gap, shall view the key factors that measures manufacturing sector performance and import dependence in Nigeria.

Onakoya (2017) analyzed the impact of changes in the macroeconomic factors on the output of manufacturing sector in Nigeria using both descriptive statistics and stationarity evaluation. Emphasis was on the connection between the macroeconomic variables (unemployment, rate of exchange, rate of inflation and interest rate) and the sustainability of the manufacturing output in Nigeria. The study utilized secondary data spanning thirty-five year period from 1971 t0 2015 sourced from Central Bank of Nigeria Statistical Bulletin (2015). The study adapted the work of Fasanya, Onakaya and Agboluaje (2013). The original model made use of the Keynesian IS-LM framework with consideration given to the liquidity puzzle, the price puzzle and the exchange puzzles. The Keynesian IS-LM framework is linked with the Augmented Solow growth model and endogenous growth theory. On the bases of empirical evaluation, the occurrence of order integration at first level difference necessitated the

deployment of the Johansen co-integration test, the Vector Error Correction model (VECM) was employed to determine the existence of possible short-run relationship and the rate of short run adjustment. The findings revealed no short-run association among manufacturing output and each of GDP, exchange rate, broad money supply and unemployment rate. Negative relationship existed amongst inflation rate, interest rate, exchange rate broad money supply on one hand, and manufacturing output. The inflation rate and interest rate were statistically insignificant. The result showed that manufacturing was a veritable engine of economic growth. Since the author ignored the key factors that measures manufacturing sector performance, this study shall be updated by providing clear insight on import dependence and manufacturing sector performance indicators in Nigeria.

Oburota and Okoi (2017) undertakethe relationship between manufacturing output and economic growth from (1981-2013). To quantify the relationship between manufacturing output and economic growth, an eclectic model consisting of both the Kaldor's first law of growth and the endogenous growth model was estimated. Findings from the study showedthat manufacturing output, capital and technology were the major determinants of economicgrowth. Results also confirm that quality of institutions and labour force does not exert any impacton economic growth. The study concludes that the provision of capital in the form of financialresources to fund the manufacturing sector will greatly improve manufacturing activities in Nigeria.Furthermore there is the need to improve resource allocation to the field of research anddevelopment to promote innovative development such as technology adaptation to boostmanufacturing activities within the country. To fill the knowledge gap, however, the study shall explore other key drivers of manufacturing sector performance and extent the period of the study to 2019.

Adelowokan, Oduola and Papoola (2020) analyzed the macroeconomic determinants of manufacturing sector performance in Nigeria between 1981 and 2018 relying on asymmetric non-linear approach. The dependent variable captures the macroeconomic variables. Such variables include GDP per capita, exchange rate, inflation rate, interest rate proxied by prime lending rate. Gross fixed capital formation. The method of analysis was non-linear autoregressive distributed lag (NARDL). The finding revealed that in the long run, import role on manufacturing sector performance is found for variables except GDP per capita. The study confirms the presence of asymmetric shocks on manufacturing sector performance for exchange rate at both time periods and interest rate only in the long-run. The study therefore suggests that government should ensure reduced and stable exchange rate that can make the local currency stronger. The study examined the macroeconomic determinants of manufacturing sector performance focusing on macroeconomic variables only without recourse to import dependence which is crucial to manufacturing sector supply chain and place of policy and institutional factors.

Achi (2020) analyzed the impact of macroeconomic factors on development in the manufacturing sector of Nigeria economy between 1981 and 2017. The study established a long-run relationship between dependent variables (manufacturing sector proxied with manufacturing output for model one and the explanatory variables (real GDP, exchange rate, inflation rate, interest rate, and foreign direct investment). It was discovered that lower interest rate encourages investors borrowing and investment on the manufacturing sector leading to increasingly manufacturing sector productivity. The study however suggests that the Central Bank of Nigeria should come up with policies that will help stabilize the interest rate to boost the investors' confidence in the economy. To fill the knowledge gap, this study will capture the performance indicators that measures manufacturing sector performance such as manufacturing output, capacity utilization, value added, employment rate and export.

III. RESEARCH METHODOLOGY

3.1 Unit root test

Table 3.1 Unit root test

VARIABLES	ADF test statistic	Critical 5%	Order	Remarks
MOUP	-3.656424	-3.513075	I(I)	Reject H_0
IMPI	-7.692177	-3.506374	I(0)	Reject H_0
IMPC	-8.691401	-3.506374	I(0)	Reject H_0
DOC	-7.681375	-3.557759	I(I)	Reject H_0

Source: Authors Computation 2022 with E-views 10

Unit root test hypothesis and decision rule

H_0: The variable has unit root (not stationary)
H_1: The variable has no unit root (stationary)

Decision rule: reject H_0 if ADF is greater than critical value in absolute terms at chosen level of significance. From the unit root tests in the table above, it was observed that the dependent variable is stationary at order I(I) while the independent variables are stationary at level except for DOC that was stationary at order I(I). Given this result, this study therefore adopted ARDL bound test for co-integration test.

3.2 Co-integration test

Table 3.2 ARDL Bounds Test (co-integration test)

Test- statistic	Value	K
F-statistic	7.324566	4
Critical Value Bounds		
Significance	I(0)	I(1)
5%	3.36	4.51

Source: Authors Computation 2022 with E-views 10

ARDL bounds testing hypotheses is stated as:

H_0: the variables are not co-integrated

H_1: the variables are co-integrated

Decision rule:

Reject H_0 if the computed F-statistic falls above the upper critical bounds at chosen level of significance and do not reject H_0 if otherwise stated.

Do not Reject H_0 if the computed F-statistic falls below the lower critical bounds at chosen level of significance.

3.3 Regression/ Estimation /Data Analysis.

Table 3.3 Estimated ARDL Regression result

Dependent Variable	MOUP		
Independent Variables			
Variable	Coefficient	t-Statistic	Probability
IMPI	0.507896	-0.749339	0.4588
IMPC	11.75370	3.420371	0.0009
DOC	7.280960	-0.289563	0.7739
ECM01(-1)	-0.211259	-2.856931	0.0072
MOUP(-1)	-0.454559	-3.289488	0.0023
Other test statistic			
Variables	Values		
R-squared	0.672890		
F-statistic and Prob(F-statistic)	4.43217 (0.000154)		

Source: Authors Compilation 2022 with E-views 10

Economically, the above short-run result reveals first among others that a unit increase in domestic consumption in Nigeria will increase Nigeria's manufacturing sector output (MOUP) approximately by 7.3units. Second, a unit increase in imported intermediate goods (IMPI) and imported capital goods (IMPC) increases MOUP by approximately 0.51 and 11.8 units respectively. The F-test shows that overall test statistics is positive and statistically significant. ECM01(-1) indicates that it will require about 21% changes for the dependent and independent variables to adjust to equilibrium in the short run. The R-squared shows that about 67% changes in MOUP is caused by IMPI, IMPC and DOC.

3.4 Conclusion

With a focus on the effects of intermediate, capital, and manufactured goods on manufacturing sector performance indicators (such as manufacturing sector output growth, capacity utilization, value added, manufacturing sector employment, and manufacturing sector export) from 1970 to 2020, this study examines the relationship between import dependence and manufacturing sector performance in Nigeria. To put it another way, the manufacturing industry has suffered because of the increase in imported goods. This is due to the impression that the manufacturing sector has turned over to importers its mentality of meeting the needs of the domestic economy. The researcher therefore draws the conclusion that, on the whole, Nigeria's manufacturing sector is surrounded by questionable benefits and might not be sufficient to create the necessary foundation for economic growth and developmental progress.

3.5 Recommendations

1. The government should adopt a perfect mix of both the import substitutionstrategy and export promotion strategy of industrialization. By adopting the import substitution strategy, Nigeria should only import those items which they cannot produce in the meantime and by the export promotion strategy, they should try to ensure that products produced in Nigeria meets up with international standard.
2. Importation of commodities whose factor of production is more labour intensive should be strictlyfrowned at. This is because Nigeria has the requisite manpower to produce those items whose factor islabour intensive in nature.

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