

Evaluation of Manufactured Goods Import and the Manufacturing Sector Productivity in Nigeria

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Abstract: In examining the need for Nigerian economy to encourage the domestic manufacturing sector, this study looks at the effect of imported manufactured goods on the performance of manufacturing sector in Nigeria. The study employed econometric analysis with Ordinary Least Square (OLS) method of data estimation and analysis and Augmented Dickey fuller test to conduct unit root test to ensure the stationarity states of the variables used. The estimated result of model one shows a positive statistically significant relationship between domestic manufacturing sector output and the Nigeria manufactured imports. Model two estimates also indicate that domestic manufacturing sector contributes positively to economic growth of Nigeria. Therefore, the study recommended among other things the use of fiscal policy measures to checkmate or control high importations of goods that can be manufactured domestically to enable domestic manufacturers expand and thus, create employment opportunities for Nigerians.

Keywords: Manufacturing and domestic manufactured goods. High importation, productivity, exports, and economic growth.

INTRODUCTION

The manufacturing sector is a development catalyzing a modern economy and has many dynamic benefits crucial for economic transformation. The importance of the sector in economic growth and development process of any economy cannot be over-emphasized. According to Nwele [1], "manufacturing in business management is recognized as vital to a strong and viable economy and, it is a management system that involves all activities from resource mobilization, understanding markets, designing products and processing, to managing complex supply chains, distribution networks and related services that creates wealth, sustains jobs and is central to economic development."

Manufacturing sector is one important sector which Nigeria needs to diversify into to meet her development needs, as it is widely accepted that exports of manufactured goods is an important means of economic measure for sustainable growth and poverty reduction. Manufacturing is the transformation and packaging of raw materials into value added products used for further production or by the final consumer.

Adenikinju [2] opines that manufacturing sector is that aspect of an economy responsible for the conversion or transformation of raw materials into finished consumer goods or intermediate goods. The

sector is conceived to be the engine of growth and that is why it is usually accorded the status of priority in any administration's economic direction. For instance, the sector in Obasanjo's administration economic plan was expected to play at least three key roles: First, the sector was allocated a significant role in poverty reduction, second, to play a leading role in broadening the productive and export base of the economy by increasing inter-sectoral and intra-sectoral linkages and third, to help reduce unemployment and stem rural-urban drift. Also, it would be recalled that one of the objectives of the Structural Adjustment Programme (SAP) packaged by International Monetary Fund (IMF) and adopted in the country in 1986 was the diversification of the productive and export base of the Nigerian economy. The manufacturing sector is expected to play a pivotal role in this diversification.

In an advanced country, the manufacturing sector is a leading sector in many respects. It is an avenue for increasing productivity related to import replacement and export expansion, creating foreign exchange earning capacity; and raising employment and per capital income. Furthermore, it creates investment capital at a faster rate than any other sector of the economy while promoting wider and more effective linkages among different sectors.

Before independence, agricultural products dominated the Nigerian economy and accounted for the major share of its foreign exchange earnings. Soludo and Adenikinju [3] said that at independence in 1960, Nigeria inherited a narrow manufacturing sector base pre-occupied with the processing of agricultural and forestry products for domestic and foreign markets; the sector was dominated by a few European commercial firms and contributed only about 4.8 per cent of GDP in 1960. The prime mover in manufacturing activities was the private sector which established some agro-based light manufacturing units such as vegetable oil extraction plants, turneries, tobacco processing, textiles, beverages and petroleum products.

In recognition of this potential role of the sector, successive governments in Nigeria have continued to articulate policy measures, strategies and programme to achieve industrial growth incentive and adequate finance. The central goal of government policy is to foster growth in manufacturing sector. Very high importations can affect any economy negatively, especially the importations of goods that can be manufactured domestically. It contributes to the downfall of infant industries which can result to retrenchment of workers. Most times, this is the reason why most countries impose high tariff on importation of products they have natural endowment or capability to produce domestically. Also, import substitution policies of countries are geared towards the protection of domestic manufacturing so as to improve domestic productivity. In view of the above, it is vital to study how manufactured imports affect manufacturing sector performance in Nigeria so as to suggest necessary policies for Nigeria imports to facilitate optimal domestic manufacturing capacity, this is the major objective of this study.

STATEMENT OF THE PROBLEM

Micro entrepreneurs have lamented that 100 years of existence as a nation since its amalgamation in 1914, Nigeria continues to import household products such as soap, cream and toothpick, among others which local manufacturers are capable of producing. President of the Association of Micro Entrepreneurs of Nigeria (AMEN) in a media chart lamented that both the federal and state government are inviting foreign investors at the detriment of local manufacturers. He said, "It is an insult to Nigerians to import soap, cream, toothpick that local manufacturers can produce after celebration of 100 years of amalgamation." Recalling his visit to the Lagos trade fair where there is complete absence of local manufactured goods, he hinted that most foreign investors come into the country to exhibit their products and go back with the money they made without investing back into the country. "Foreign investors cannot industrialize Nigeria; they are paying tax in their own country. Federal and state governments go outside the country, looking for foreign investors, who are micro entrepreneurs that started small in their country

and became big with assistance from their governments. Nigeria government requests them to come and establish companies in Nigeria leaving the micro entrepreneurs in their own country that could have been financed and encouraged [4].

Manufacturing in Nigeria however is still at an infant stage. It accounted for only about 7.6% of growth rate of gross domestic products in 2011 [5]. The industrial base is small and there is great scope for expansion. The Nigerian industries are concentrated in light consumer goods. There is hardly any production of intermediate goods. A review of the statistics from comparable countries shows that the share of primary commodities in total exports is 20.0% for Malaysia, 24.0% for India, 12.0% for China. For developed countries it is 17% for Britain and America and 9% for Japan. However, in Nigeria, the primary sector contributes 99 % of exports with only 1.0% coming from the secondary sector (manufacturing sector) [6]. Another feature of the manufacturing sector is its over-dependence on imports for the supply of raw materials and spare parts. There is no single industrial product in which the country is entirely self-sufficient.

The Nigeria's import bill is dominated by the cost of raw materials and spare parts for industries. This explains why in the 1980s the economic stabilization measures designed to conserve foreign exchange affected industries most adversely. Many factories as a result of this reduced their scale of operations completely and even some had to close down completely with increase in unemployment rates [7]. It is therefore against these odds that the study tries to assess empirically, the effect of these imported manufactured goods on the performance of the manufacturing sector in Nigeria. In view of the above problems, these research questions were raised to guide: To what extent have imported manufactured goods affected the performance of the domestic manufacturing sector output in Nigeria? What is the contribution of domestic manufacturing sector to economic growth of the Nigerian economy?

OBJECTIVES OF THE STUDY

The study aims to critically appraise the growth performance of Nigeria manufacturing sector in the face of much imported manufactured goods. Specifically, to assess the link between imported manufactured goods and performance of domestic manufacturing sector and also the contribution of domestic manufacturing sector to economic performance of the Nigerian economy. In the light of the research questions, the following null hypotheses were formulated and tested: Imported manufactured goods have no significant influence on the performance of domestic manufacturing sector output in Nigeria and Domestic manufacturing productivity has not affected the economic growth of the economy significantly.

Policy Relevance

With the core objective of the study in mind, the research work serving as useful document will enable policy makers to formulate appropriate policies to combat the problems of manufacturing sector in Nigeria. It will also help the government in terms of import tariff policies that will enhance the growth of domestic manufacturing sector activities in Nigeria.

LITERATURE REVIEWED

Theoretical Literature

Manufacturing production structure has been a derivative of the various development plans of Nigeria – [8]. The First National Development Plan (1962-1968) emphasized light industry and assembling activities. The second plan (1970-1975) had a somewhat similar thrust and focus, but the emphasis shifted in the third plan (1975-1980) towards heavy industries. Major projects were initiated in the steel and petroleum refinery sector. For the fourth plan (1980-1985), the broad direction was in consonance with the third: it retained the stress on heavy industries. But several of the grandiose plans were short changed with the onset of the profound economic crisis in the early 1980s. Players in the Nigerian industrial and manufacturing sector can be classified into four, namely: (a) Multinational (b) National (c) Regional and (d) Local groups. Apart from the multinational operators, most of the other players have disappeared in the last two decades due to unpredictable government policies, lack of basic raw materials, most of which are imported.

Malik *et al* [9] discloses, in a survey report administered under UNIDO's Centre for Study of the African Economy, that the skills and technology usage levels in the Nigerian manufacturing sector are not very satisfying. Not only that, the report also revealed that the Nigerian manufacturing sector is not even open towards the usage and adoption of the new technologies and skills; thus stagnating and even negatively affecting the efficiency of the firms. The reason behind giving less importance to new technologies and skills is traced back to the deficiency of adequate investment in the sector. Only half of the companies that participated in the survey disclosed that they made investments in technology during the period under study, this alone shows the trend in technology investment in the sector. The survey also divulged that lack of financial facilities is exacerbated by the unwillingness of the investors to give their money to the manufacturing companies.

Onayemi [10] put forward that the economy of Nigeria is too dependent on oil and it is not progressing significantly due to inconsistency in macroeconomic policies for the growth of different sectors in the economy. When the government only works to safeguard the oil companies' interests, the price of oil does not remain at an affordable level and the manufacturers have to pay more for the energy

resources they consume in the manufacturing process. When there is news about the discovery of more crude oil wells in the country, foreign investors start paying attention towards it, resulting in the rise of foreign direct investment (FDI) as well as the employment rate. In this way, the economy of Nigeria is determined by oil production and oil prices. It is therefore evident that Nigeria remains highly dependent on oil, which accounts for 80% or more of its foreign exchange during the last four decades. This policy has proved to be quite harmful to the country because oil price fluctuation has a negative impact on the economy, causing a certain level of instability and uncertainty. The government neglected the non-oil sectors including manufacturing industry which has made Nigeria the least industrialized country in the region.

In the Nigerian experience, the downturn of the global oil market of the early 1980s and the sharp decline in foreign exchange earnings have adversely affected economic growth and development in Nigeria coupled with the global financial crisis that rocked the world economies. Problems particular to the economy of Nigeria include; excessive dependence on imports for consumption and capital goods, dysfunctional social and economic infrastructure, unprecedented fall in capacity utilization rate in industry and neglect of the agricultural sector, among others. These have resulted in fallen incomes and devalued standards of living amongst Nigerians.

According to Anyanwu [11], although the structural adjustment programme (SAP) was introduced in 1986 to address these problems, no notable improvement has taken place. From a middle income nation in the 1970s and early 1980s, Nigeria is today among the 30 poorest nations in the world.

Obasanjo administration improved performance of manufacturing sector through National Economic Empowerment and Development Strategy (NEEDS), State Economic Empowerment and Development Strategy (SEEDS) and Local Economic Empowerment and Development Strategy (LEEDS) at federal, state and local government levels which spanned between 2003 and 2007, while Yar'Adua's administration incorporated and prioritized manufacturing sector in his Seven-Point Agenda (NEEDS, 2004). Thus, according to Goodluck Jonathan, "the manufacturing sector is key to the realization of the nation's vision 20/2020 aspiration, hence a team of technocrats from Manufacturers' Association of Nigeria (MAN), NACCIMA and related bodies as well as key government officials to constitute a special committee to be coordinated by the Chief Economic Adviser to the President, to deliberate regularly on policies that would improve the nation's economy [12].

Oloninshola [13] enumerated the problems that the Nigerian manufacturing sector is faced with. The problem of weak purchasing power among generality of the population that directly translates to depress demand, a high cost of operating environment arising from collapsed infrastructural facilities coupled with depreciating and unpredictable exchange rate. Furthermore, the sector has been confronted with unfriendly business demands, for instance, the introduced Lagos state land use charges which has led to the forceful closure of some business premises, worsening security situation, absence of long term funding and high unsustainable interest rate.

According to Pindo in Adenikinju and Olofin [14] argues that firms in less developed countries are found to be cost minimizing but subject to some specific government related constraints. Government controls does not only limit the potential menu of instruments, but frequently circumscribe the issue and pricing of permitted instruments. However, he maintained that these constraints are disappearing with financial markets development.

According to Njoku [15], the Nigeria government in 1988 took a bold step to encourage favorable attitudes towards made-in-Nigeria goods in a bid to actualize the Enterprises Promotion Decree, the basis of this decree was to reduce foreign dominance on the economy, encourage local retention of profit and create employment opportunities amidst other objectives. One of the plans was to encourage locally made goods or the import substitution strategy. The deregulation policies of the federal government following the Structural Adjustment Programme (SAP) in 1986 ushered in the collapse of several local industries that could not face the onslaught from the deluge of imported products. Consequently, Nigeria began trading rather than a production based economy. By 1995 with the tight economic situation experienced under the Abacha regime, it became more difficult for the importation of finished goods into Nigeria as exchange rate hit the roof. Nigeria once again unconsciously started shifting towards local production. Cottage industries started springing up in the areas of pure water packaging, food processing, cosmetics, textiles, shoes etc; but now they are being discouraged and many are folding up. The advent of civilian administration caused national borders to be wide open as free trade is embraced and products like peppermint, toothpaste, soaps, detergents are now being imported from Malaysia, Indonesia, India and China. The implication of this is that the attitude of Nigerians towards locally made goods is being again lowered. The Nigerian government has since independence in 1960 made conscious efforts to reduce dependence on foreign manufactures through supportive programme aimed at making the local demand along the line of substitution. Some of the supportive programmes or policy instruments include various incentive packages in the

form of tax and import duty relief as well as tariff protection.

Ogunkola and Bankole [16] noted that the inadequate provision of electricity, water and reliable telephone services are major impediments to producing efficiently in Nigeria. Ukaegbu [17] has a different opinion. According to him, the claim that inadequate physical infrastructure, such as transportation, electricity, telecommunications and water supply hinder industrialization, technical capabilities are the center of new theories of economic growth which focus on technology and human capital as engines of growth. He says it would be erroneous to maintain that there is shortage of scientific and technological manpower in Nigeria when many graduates in science, engineering and technical education are unemployed. He further observes that the absence of an indigenous entrepreneurial class coupled with other problems of multinationals affect the structure and operations of Nigerian industries, influence the nature and operations of Nigerian industries and influence the nature of utilization of scientific and technological labour for national development. He came up with the conclusions that the development of modern industry in Nigeria has depended on the importation of highly packaged technological inputs, creating a preponderance of assembly industries. Such assembly industries limit the use of skills and capabilities of the highly trained scientists and engineers employed in industry; and the consequent under-utilization of scientific and technological manpower tend to undermine technological advancement.

Nwokoma [18] identified the following incentives to manufacturing firms: Investment tax allowance; Dividend derived from manufacturing companies in petro-chemical and liquefied natural gas sub sectors are exempted from tax; Companies with a turnover of less than N1 million are taxed at a low rate of 20 percent for the five years of operation, if they participate in manufacturing; Dividends from companies in the manufacturing sector with a turnover of less than N100 million are tax-free for the first five years of their operation, Section 24 of the National Industrial Protection Council (NIPC) decree provides that a foreign investor in an enterprise shall be guaranteed unconditional transferability of funds in freely convertible currency of dividends or profit (net of taxes) attributable to the investment, remittance of proceeds among others.

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the efficiency of the firms. The reason behind giving less importance to new technologies and skills is traced back to the deficiency of adequate investment in the sector. Only half of the companies that participated in the survey disclosed that they made investments in technology during the period under study, this alone shows the trend in technology investment in the sector. The survey also divulged that the lack of financial facilities is exacerbated by the unwillingness of the investors to give their money to the manufacturing companies. When firms invest less in technology, they also invest less in the skilled labour needed for these; and with no other sources of capital for investment, they are not in a position to remedy the situation. With barely any advanced machinery and techniques of production, the firms are rendered unable to compete in a larger scale. And as all of these issues continue to result in the low level of competitiveness of the Nigerian manufactured products, the overall efficiency and productivity of the sector will always remain on a lower scale.

Ojowu [19] in the analysis of the situation of the Nigerian manufacturing sector came to the point that capacity utilization is an important issue that must be properly addressed in all discussions and all measures to be taken in the future. He argues that the sector is progressing very slowly due to low capacity utilization. Issues associated with capacity utilization such as capacity decline, capacity expansion and capacity mortality are essential discussion points in the issue of bringing quality into the performance of the Nigerian manufacturing sector. On top of these issues, the burden of external debt is also affecting the sector's performance. He also argues that government is not giving enough attention towards the policies related to the manufacturing sector as compared to those of other sectors. To contend with Ojowu's last point, reforms must also be applied to different sectors that are associated with the manufacturing sector and not just the manufacturing sector itself; as the high or low performance of one sector can affect the progress of the others. For instance, if government works to improve infrastructure then the manufacturing of products would also be improved.

Enebong [20] predicts that the level of the Nigerian manufacturing organizations' performance will continue to see a decline because as it is now, the manufacturers will have even more problems in accessing raw materials due to stiff competition from foreign firms. He theorizes that many of the policies implemented by the government in the late 1990s are still acting as barriers to manufacturing sector growth. Some of these policies include backward integration and the inward orientation strategies towards import substitution. The private sector also failed to play a significant role in the manufacturing industry; and there are certain reasons behind this, such as import barriers, tariffs, licenses and other policies that resulted in raw materials unavailability.

Structure of the Nigerian Economy

Structurally, the Nigerian economy can be classified into three major sectors namely primary/agriculture and natural resources; secondary—processing and manufacturing; and tertiary/services sectors. The economy is characterized by structural dualism. The agricultural sector is an admixture of subsistence and modern farming, while the industrial sector comprises modern business enterprises which co-exist with a large number of micro-enterprises employing less than 10 persons mainly located in the informal sector. The agricultural sector has not been able to fulfill its traditional role of feeding the population, meeting the raw material needs of industries, and providing substantial surplus for export [6]. Indeed, the contribution of the sector to total GDP has fallen over the decades, from a very dominant position of 55.8 per cent of the GDP in 1960-70 to 28.4 per cent in 1971-80, before rising to 32.3, 34.2 and 40.3 per cent during the decades 1981-90, 1991-2000 and 2001 – 2009, respectively (Table 1). The fall is not because a strong industrial sector is displacing agriculture but largely as a result of low productivity, owing to the dominance of peasant farmers and their reliance on rudimentary farm equipment and low technology. Another feature of the sector is under-capitalization which results in low yield and declining output, among others.

Table 1: Sectoral Contributions to GDP

ACTIVITY SECTOR	1960-1970	1971-1980	1981-1990	1991-2000	2001-2009
Agriculture	55.8	28.4	32.3	34.2	40.3
Industry	11.3	29.1	41.0	38.6	22.5
Manufacturing	6.6	7.3	6.1	4.9	3.9
Building & Construction	4.8	8.3	2.3	1.8	1.8
Wholesale and Retail Trade	12.8	17.6	14.5	13.8	14.0
Services	15.3	16.5	9.8	11.5	17.5
Total Value Added	100.0	100.0	100.0	100.0	100.0
Diversification Index	0.2	0.4	0.4	0.4	0.3

Source: National Bureau of Statistics

The industrial sector comprises the manufacturing, mining (including crude petroleum and gas) and electricity generation. Prior to independence in 1960, the Nigerian economy was mainly agrarian. On attainment of independence, the Nigerian government embarked on the programme of transforming the country into an industrial economy. The Nigerian manufacturing sub-sector is made up of large, medium and small enterprises, as well as cottage and hand craft units. In spite of spirited efforts made to boost manufacturing output and various policy regimes, manufacturing has not made any significant contribution to the growth of the economy. Industry as a whole contributed only 11.3 per cent of the GDP in 1960-70, growing significantly in the next two decades to a high of 41.0 per cent in 1981-1990 owing largely to the crude petroleum and gas production during the decades. The contribution contracted to 38.6 per cent in the 1990s and further to 22.5 per cent during 2001-2009 [6]. These numbers, in fact, belie the poor contribution of the manufacturing sub-sector to aggregate output in Nigeria compared with its peers in Asia and Latin America. Indeed, the contribution of the manufacturing components has on average been below 5.0 per cent in the last two decades. Even the relatively high contribution of oil sector to the industrial sector contribution is being driven largely by crude production and not by the associated 'core industrial' components like refining and petrochemicals. The contribution of wholesale and retail trade and services has more or less remained stable while that of building and construction rose sharply from 5.3 per cent in the 1960s to 8.3 per cent in the 1970s, but fell consistently, thereafter, to 1.8 per cent during 2001-2009. During and some few years after SAP, the main manufactured exports were textiles, beer and stout, cocoa butter, plastic products, processed timber, tyres, bottled water, soap and detergents as well as iron rods. However, some of these products have disappeared from the export list owing to poor enabling environment. The components of the mining sub sector in Nigeria are crude petroleum, gas and solid minerals. Prior to the advent of petroleum minerals, coal and tin were the main mineral exports. However, with the emergence of crude oil, the relative importance of solid minerals diminished. Indeed, since the 1970s, the largest mining activity has been crude oil production, which became dominant in terms of government revenue and export earnings. Lately the production of gas has gained increased attention, as the export potential of gas has reduced the dominance of crude oil.

State of Manufacturing Sector in Nigeria

According to Franklin Alli [21], Manufacturing Association of Nigeria (MAN) examines the state of manufacturing sector on August 4, 2010 during Nigeria at 50 years celebration, MAN revealed that many manufacturing firms in the country have either closed shop or suspended production and about 820 such companies have done this between 2000 and 2008. In the last 12 months alone 37 companies have

closed shop bringing the dismal corporate fatality to as disturbing as about 857 companies failed (MAN). The president of MAN, Borodo identified the twin problem of multiple taxation and poor state of infrastructure as the cancer killing Nigeria industries. On a broader and more national scale however, what has affected badly the performance of industry in Nigeria more than ever in recent times are the revenue generation drive of state governments, multiple taxation and duplication of taxation, absence of infrastructure and meaningful road rehabilitation in industrial areas in spite of the huge taxes and levies. As a result, the production and running costs of companies have become so high and grossly dislocated due to closures by government especially with regard to breaches of revenue driven effluent treatment and disposal requirements. Also, there is the very costly problem for the industries of coping with the exorbitant price of raw materials coupled with the delays caused by the bureaucratic process of clearing raw materials through the sea ports. Meanwhile, in an effort to stimulate the comatose manufacturing sector, the Central Bank of Nigeria (CBN) has granted a N150 billion life-line, saying some 150 entrepreneurs and existing industries are to get N1 billion each to revive their operations. The N150 billion is part of the N500 billion infrastructural revival funds packaged for power and other baseline infrastructure revival. The credit carries 15-year tenure with an interest of seven per cent (CBN, various issues).

Empirical Literature

Ishola, [12] studied the influence of government expenditure in manufacturing sector on economic growth in Nigeria using Solow Growth Model and Ordinary Least Square (OLS) method of estimation. The result shows a significant positive relationship between government expenditure in manufacturing sector and Gross Domestic Product in Nigeria which is the proxy for economic growth.

Alao [8] examines productivity in Nigerian manufacturing sub-sector using an Error Correction Model (ECM) and Co-Integration test on time series data spanning from 1979 and 2008. The study shows that interest rate spread and exchange rate have negative but significant relationship with index of manufacturing production.

Adenikinju, *et al* [14] studied the Nigerian manufacturing sector's performance with regards to the relationship between productivity, performance and energy consumption within the manufacturing organizations. Utilizing an aggregate model, he measured the changes in the total factor productivity of the sector relative to the change in energy consumption. The research concluded that efficiency and productivity of the Nigerian manufacturing organizations are indeed related to the energy supply and energy price. While the energy resources were found to play a critical role in the manufacturing sector though, it was also discovered that

the energy source alone cannot effectively improve the performance of the manufacturing sector in Nigeria. An important point identified in the research was that the manufacturing sector is too committed to using old technology and as such, there is a great need for the adoption of more advanced energy-efficient technological devices and techniques. For this reason, reforms concerning the prices of energy options alone do not significantly affect the performance of the sector because it is hindered by the need for improved technology and energy supplies. Thus, the reforms in the energy sector need to happen alongside technological reforms, otherwise the manufacturing organizations cannot entirely enjoy the advantages of the energy resources.

Alli reviewed the performance of the Nigerian manufacturing sector by surveying the results of a study conducted in 2007 by the Manufacturers Association of Nigeria (MAN). The report disclosed that during the last few years many of the manufacturing companies in the country have as the past studies predicted, faced bad times. It was discovered that only a meager percentage of manufacturing companies (10%) are operating at a sustainable level, whereas as much as 60% are going to shut down or have already shut down after facing several series of financial and other kinds of crises. Many factors were identified by MAN to be the root cause of the problem. The reasons behind the low growth and performance of the Nigerian manufacturing sector during the last few years include “high production costs caused by energy, high interest and exchange rates, influx of inferior and substandard products from other nations, multiplicity of taxes and levies, poor sales partly as a result of low purchasing power of the consumers, bogged down with delay in clearing consignments due to existence of multiple inspection agencies at the ports, etc”.

Theoretical Framework: Cornwall’s Manufacturing Output Growth Determinants Theory

Cornwall’s manufacturing output growth determinants theory explains that the growth of aggregate output of an economy depends on the growth rate of manufacturing output.

$$Q_m = g_0 + g_1Q + g_2q_2 + g_3qr + g_4(1/Q)_m \quad \text{-----(1)}$$

$$Q = e_0 + e_1Q_m \quad \text{-----(2)}$$

Cornwall in his first equation explains the output growth in the manufacturing sector and in the second the aggregate output rate. According to him, the second equation explains that the growth of aggregate output depends on the rate of growth of manufacturing output Q_m , Q_m is reflected in the coefficient e_1 , which is exactly the measure of the power of manufacturing as an engine of growth. Equation one of the model explains that determinants of the growth rate of manufacturing output Q_m , are the level and growth of rate of aggregate income (Q), income relative to most

developed economies (q_2) and (qr). The level of income is introduced to take into consideration that when per capita income rises, consumption shifts from goods to service. A feedback from demand growth is introduced via the income growth rate. The ratio of per capita income compared with that of high-income countries captures the size of the technology gap: the larger the gap with the technological frontier, the greater the amount of technology that an industrializing country can borrow and so the higher the rate of industrialization. Investments measure the efforts to develop (borrowed and indigenous technologies). Estimation of Cornwall’s model for market economies has revealed the importance of the manufacturing sector flexibility (the ability of the economy to shift towards manufacturing activities) and investment [22].

METHODOLOGY

Multiple regression analysis made explicit in the use of Ordinary Least Squares (OLS) technique. The technique is adopted because it is a statistical tool that helps to predict one variable from the other variable(s) on the basis of the assumed nature of the relationship between the variables. The variables that form the basis for prediction are usually referred to as the independent or explanatory variables (regressors) while the variable whose values are being predicted is called the dependent variable (regressand). The implicit function of this model takes this form: $NDMOV = F(NMIV, EXR, INTR)$, while the econometric model specification for the Nigeria Domestic Manufacturing output equation to achieve the objective one is specified as:

$$NDMOV_t = \beta_0 + \beta_1 NMIV_t + \beta_2 EXR_t + INTR_t \quad \text{-----(1)}$$

where,
 $NDMOV_t$ = Domestic manufacturing sector output value at time t
 $NMIV_t$ = Imported manufactured goods value at time t
 EXR_t = Real exchange rate at time t
 $INTR_t$ = Interest rate at time t

Model 2

$$GDP_t = \beta_0 + \beta_1NDMOV_t + \beta_2NMIV_t + \beta_3EXR_t + \beta_4 INTR_t \quad \text{-----(2)}$$

where,
 GDP = Gross Domestic Product as a proxy for Nigeria Economic performance
 $NDMOV_t$, $NMIV_t$, EXR_t , and $INTR_t$ are as stated above in model one.
 β_0 = intercept which shows the value of variation in dependent variable without the influence of the explanatory variables.
 β_1 , and β_2 = Parameters to be estimated and they account for variations in dependent variable as a result of changes in the explanatory variables respectively.
 μ = error tem represents among other things, factors not accounted for that may affect the dependent variable in question.

Estimation Procedure

The estimation commenced with an extensive unit root test to confirm the stationarity states of the variables that entered the model using Augmented Dickey-Fuller (ADF). The secondary data used were

extracted from the CBN Statistical Bulletin (various issues), National Bureau of Statistics and Manufacturers Association of Nigeria (MAN).

ANALYSIS OF RESULTS

Table 1: The unit root test results obtained were summarized as

Variable	ADF Test Statistic	Critical Value	Order of Integration
GDP	4.067312	-2.9627	1(0)
NDMOV	-6.505230	-2.9665	1(1)
NMIV	-3.146634	-2.9665	1(1)
EXCR	-3.245115	-2.9705	1(1)
INTR	-4.648774	-2.9665	1(1)

From the result above, GDP is stationary at level, thus, it is integrated of order zero. This is because its ADF statistic in absolute value is greater than its critical value at 5%. While the ADF statistics of NDMOV, NMIV, EXCR, and INTR in absolute values were less than their respective critical values at both 5% and 1% level of significance, meaning that they are not stationary at their level forms. This implies that only GDP fluctuates around a given mean overtime while the other variables do not, which invariably means that only

the movement of GDP is predictable at level form and good for economic forecasting. Therefore, since non stationary variables are not good for economic forecasting, all non-stationary variables above were differenced to reduce their time constraints. The variables at first differences became stationary, thus, they are integrated of order one.

Model One Estimated Result

Table 2: Dependent Variable: LOG(D(NDMOV)) Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-14.01917	7.339361	-1.910135	0.0754
LOG(D(NMIV))	2.354711	0.716146	3.288032	0.0050
D(EXCR)	-0.017610	0.029378	-0.599439	0.5578
D(INTR)	-0.022801	0.154219	-0.147849	0.8844
R-squared	0.512067			
Adjusted R-squared	0.414481	F-statistic		5.247318
Durbin-Watson stat	3.007001	Prob(F-statistic)		0.011241

The estimated model is as follows:

$$NDMOV = 14.01917 + 2.354711 NMIV - 0.017616EXCR - 0.022801INTR$$

The estimated model above shows a positive relationship between Domestic Manufacturing sector output (NDMOV) and the Nigeria Manufactured Imports (NMIV). Observing the fact that NDMOV and NMIV variables were logged in the regression output, the slope parameter of NMIV = 2.354711 indicates that 1% increase/decrease in Nigeria manufactured imports will increase/decrease the Domestic Manufacturing sector productivity by 2.35%. This result is not in conformity with the a priori expectation that high imports of manufactured goods will have adverse effect on the Nigeria domestic manufacturing productivity. The non-conformity to a priori expectation may be due to poor implementation of different trade policies or adopting policies the country cannot adapt to. For statistical significance, the t value of NMIV = 3.288032 is greater than 2 and the significance probability value as 0.0052 when multiplied by 100 is less than 5%, which is the desired level of significance, we conclude

that the imports of manufactured goods in the economy has statistically significant effect on domestic manufacturing sector performance. The probability of F-statistic as 0.01141 indicates that the explanatory variables used in the model above has joint statistical effect on the domestic manufacturing sector. The value of coefficient of multiple determinations (R^2) = 0.512067 indicates that the explanatory variables used explains about 51.2% of the variations in Nigeria manufacturing sector output. The adjusted (R^2) = 0.414481 indicates that R^2 when adjusted for the degree of freedom associated with the sum of squares, the explanatory variables still explains about 41.5% of the variations in Nigeria manufacturing sector output. The Durbin Watson statistic = 3.007001 is prove of no negative autocorrelation in the model above. Therefore, the analysis above entails the rejection of the first null hypothesis and the conclusion that imported manufactured goods have statistically significant positive impact on the domestic manufacturing sector output.

Model two Estimated Result**Table 3: Dependent Variable: LOG(GDP) Method: Least Squares**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.525447	4.323448	0.121534	0.9050
LOG(D(NDMOV))	0.492193	0.136411	3.608169	0.0029
LOG(D(NMIV))	0.881301	0.496311	1.775702	0.0975
D(EXCR)	0.015881	0.015706	1.011151	0.3291
D(INTR)	0.007732	0.081536	0.094834	0.9258
R-squared	0.791249			
Adjusted R-squared	0.731606	F-statistic		13.26639
Durbin-Watson stat	1.479760	Prob(F-statistic)		0.000113

The estimated model two results can be stated thus:

$$\text{GDP} = 0.525447 + 0.492193\text{NDMOV} + 0.881301\text{NMIV} + 0.015881\text{EXCR} + 0.007732\text{INTR}$$

The result above also indicates a positive relationship between the Nigeria domestic manufacturing sector output (NDMOV) and its Gross Domestic product (GDP) proxy for economic growth. Using the log form of NDMOV and GDP in the regression result above, the slope parameter of NDMOV = 0.492193 indicates that 1% increase/decrease in Nigeria Domestic manufacturing sector output will increase/decrease the Nigeria Gross Domestic product by 49.2%. This conforms to a priori expectation that any increase in manufacturing sector output will have positive effect on Nigeria's economic growth and vice versa. For statistical significance, the t value of NDMOV as 3.60819 is greater than 2 and the fact that the probability value as 0.0029 if multiplied by 100 would be less than 5%, which is the desired level of significance, we conclude that the Nigeria domestic manufacturing sector output has contributed significantly to Nigeria's economic growth. The probability of F-statistic as 0.000113 indicates that the overall regression is statistically significance. The value of $R^2 = 0.791249$ indicates that the explanatory variables used have jointly explained about 79.1% of the variations in Nigeria Gross Domestic Product. The adjusted $R^2 = 0.731606$ indicates that R^2 when adjusted for the degree of freedom associated with the sum of squares in the model above, the explanatory variables still explains about 73.2% of the variations in Nigeria GDP. Based on the result analysis above, we hereby reject the second null hypothesis and conclude that domestic manufacturing sector productivity has affected the economic growth of the Nigerian economy significantly.

SUMMARY AND CONCLUSION

The above literature reviewed has presented a detailed account of information related to the past and present performance of the Nigeria manufacturing sector. The findings are evidence that the economy of Nigeria depends heavily upon the oil sector and have neglected the non-oil sectors. At present, the growth

and performance of the manufacturing sector is found to be in great need of reforms and improvement because its contribution to GDP is low. Government is expected to come up with support policies that would encourage and promote the manufacturing sector. Thus improving the domestic manufacturing sector will be very vital for the economy of Nigeria. Also, for improved and favourable balance of payment, Nigeria should observe higher domestic manufacturing activities, especially manufacturing for exports.

Human resource management, technology adoptability, cost competitiveness and availability of skilled and qualified labour are equally some of the common challenges hindering the progress of the manufacturing sector. In light of these problems and challenges, the following recommendations were proffered:

That Nigeria policy makers should use fiscal policy measures to control or check high importation of manufactured goods so as to encourage the domestic manufacturers to expand their business and boost the capacity utilization of the sector and productivity.

Since the domestic manufacturing sector output has positive statistically significant effect on the Nigeria economic performance, government should give domestic manufacturing firms tax holiday, subsidy and other incentives to help the growth of the sector, which invariably will increase the self-reliance of the Nigerian economy.

The Nigerian research institutions should be well supported by government and other public sector and private companies in order to conduct the researches needed to arrest the declining trend in Nigeria manufacturing sector.

Funds should be made easier to the manufacturing sector to invest in up-to-the-minute machineries, information and communication technology and human capital improvement, which is critical to reducing manufacturing costs, and raising output.

Government should provide infrastructural facilities particularly, power to increase productivity in manufactured goods and reduce cost of productions to enable them compete effectively in the international market.

In conclusion, the above recommendations if implemented would help to improve on the domestic manufacturing capacity of Nigeria for the general welfare of the nation.

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