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Trade Liberalization and Manufacturing Sector Performance in Nigeria

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ABSTRACT: This study examined the impact of trade liberalization on manufacturing sector performance in Nigeria from 1970 to 2018. A multiple regression model was developed to achieve the study's objectives with real manufacturing growth rate (RMGR) as proxy for manufacturing sector performance. Import penetration, export penetration, dummy variable for structural adjustment programme alongside other control variables were used. Using the Autoregressive Distributed Lag (ARDL) bound testing for cointegration approach, it was found that all the variables for the model had long run relationship. Furthermore, the ARDL results revealed a mixed impact of trade liberalization on the performance of the manufacturing sector. Specifically, while trade liberalization exerted insignificant positive impact on RMGR in the short run, the impact was positive and statistically significant in the long run. Consequently, the study recommended policies that would encourage the importation of capital goods to enhance manufacturing productivity in Nigeria.

KEYWORDS: Trade Liberalization, Real Manufacturing Growth Rate, Import Penetration, Export Penetration and Autoregressive Distributed Lag

1. INTRODUCTION

The world development report 1991 argued that the primary responsibility for development rests with developing countries, which should emphasize: investing in people, improving the climate for enterprise, opening economies to international trade and investment and getting macroeconomic policy right (World Bank 1991, p.79).

As Szirmai (2009) argued, since the late 18th century, the manufacturing sector has been the main engine of growth, development and catch up. He held that manufacturing is important for growth in several respects including: (a) there is an empirical correlation between the degree of industrialization and per capita income in developing countries; (b) productivity is higher in the manufacturing sector than in the agricultural sector; (c) manufacturing is assumed to be more dynamic than other sectors; and (d) developing countries with higher shares of manufacturing and lower shares of services show faster growth than the advanced service economies.

Trade liberalization also known as trade openness entails the removal or reduction of trade barriers in the form of tariff and non-tariff barriers (such as quotas, embargos, anti-dumping, prohibitions and licensing schemes) to enhance the free flow of goods and services across national borders. (Adebayo, 1999).

The trade policy trajectory of Nigeria, according to Adenikinju (2005), has gone through periods of high protectionism to its current more liberal stance. At the advent of independence, Nigeria sought after an import replacement industrialization method. This elaborated the utilization of exchange strategy to give viable assurance to local producing businesses, through such measures as quantitative limitations and high import obligations. Numerous things were in like manner put on import forbiddance. In this period, all imports from Japan were set under import permit. Hardware and extra parts imports were confined and trade controls on the bringing home of profits and benefits were implemented. restrictions were likewise applied on unnecessary consumer products imports.

Trade policy between 1970 and 1976 assumed a less restrictive stance, ostensibly because of demands necessitated by the post-war reconstruction. Consequently, just things that were viewed as superfluous consumer goods were restricted, while tax rates on raw materials were reduced and quantitative restrictions on spare parts, agricultural equipment and apparatus were loose. Additionally, the remaking overcharge on imports was decreased from 7.5 percent to 5 percent and later totally disposed of, while trade controls and benefit bringing home were likewise loose.

From 1981, there was an arrangement to move towards trades advancement and a transition to increase the utilization of local sourced resources in production. Nevertheless, the expanded imports prompted a deteriorating of the level of external income as well as national income, which constrained the public authority to declare the Economic Stabilization Act in April 1982. Under this Act, taxes on 49 things were raised, while forbiddance was forced on gaming machines and frozen poultry. Further, 29 items were

taken out from the overall import permit system and put under explicit permit, while the utilization of pre-shipment assessment got inescapable. During 1983 - 1985, 152 things were brought under explicit import permit, and foreign trade guidelines turned out to be more severe. The focal goal of exchange strategy was to give assurance to homegrown ventures and lessen the apparent reliance on imports; an end product of that goal was a craving to decrease the degree of joblessness and create more incomes from the non-oil area. Likewise, duties on crude materials and intermediate capital products were downsized (CBN Annual Report, 2005)

From 1986, there was a significant shift in trade policy direction towards greater liberalization. This shift in policy was directly attributable to the adoption of the structural adjustment programmes. The Customs, Excise, Tariff and so on (Consolidation) Decree, instituted in 1988, depended on another Customs merchandise characterization, the Harmonized System of Customs Goods Classification Code (HS). It accommodated a seven-year (1988 - 1994) duty system, with the target of accomplishing straightforwardness and consistency of tax rates. Imports under the system accordingly pulled in advertisement valorem rates applied on the Most Favored Nation (MFN) premise. Another seven-year (1995 - 2001) tax system, set up by Decree No. 4 of 1995 succeeded the past (1988 – 1994) system. The tax structure over the time frame 1988 - 2001 expanded import obligations on crude materials, and on halfway and capital products, while duties on buyer merchandise were somewhat decreased. This was pointed toward diminishing bends in asset distribution and battling sneaking. Both the 1988 and 1995 tax plans had arrangements for audits and alterations. In any case, they kept up the natural blended patterns in tax systems. Three sorts of changes were consequently normal, to be specific, decrease in rates; increment in rates as well as expulsion from or expansion to the import forbiddance list (Adenikinju and Chete, 2002).

From 2001 to 2012, international trade was progressively liberalized with emphasis placed on private enterprise-led growth and diversification of the export base, in a bid to enhance non-oil foreign exchange earnings. Accordingly, the major thrust of Nigeria's trade policy was the support of production and distribution of goods and services for both the domestic and international markets with the intention of achieving enhanced economic growth and development. As outlined by Federal Government of Nigeria (2001), amongst the overall objectives of trade policy were: integrating the Nigerian economy into the global market by establishing a liberal market economy; progressive liberalization of the import regime to increase competitiveness of domestic industries; diversification of exports as well as promoting exports in both traditional and non-traditional markets; and enhancing the attainment of national economic gains from regional bilateral arrangements and multilateral trading systems through effective participation in trade negotiations. Other objectives included: putting in place special incentive packages to attract foreign capital inflow into production focused on exports; and promoting the transfer, acquisition and adoption of suitable and sustainable technologies to assure competitive export-oriented industries (Akims, 2017).

The 2013 through 2018 trade policy sustained Nigeria's commitment to the tenets of trade liberalization as a channel to achieving industrialization and development. The policy outlined three strategic objectives including the advancement of domestic trade through the reduction of the cost of doing business by providing trade related infrastructure, and reducing multiple taxes; and promoting regional trade by ensuring speedy haulage of cargo within ECOWAS, improving standards of products, formalizing informal trade along Nigerian borders, and abiding by the ECOWAS Common External Tariff (CET). Also, international trade was to be supported through the opening up of new exports markets for the country's value-added products while sustaining existing markets for non-oil exports (Nigerian Annual Trade Policy Report, 2017).

Despite implementing policies that enhance the free flow of merchandize and technological know-how over the years, the impact on manufacturing performance in Nigeria remain vague as the preference for imported manufactured goods particularly consumer goods continues to rise. According to neo-mercantilism, the expressed preference for manufactured imports implies the exportation of real income to those countries where such commodities are imported from (Lokanathan, 1973).

Assessing the sector's performance, the Manufacturers Association of Nigeria (MAN) (2017) identified some of the factors responsible for the decline of the manufacturing sector in Nigeria to include: (i) poor and deteriorating infrastructural services (ii) deepening weak domestic demand (iii) high and unplanned inventories (iv) unbridled influx of cheap imports of substandard, fake and used products including dumping of all manner of finished goods. Consequently, this study seeks to investigate the short and long run impacts of trade liberalization on real manufacturing sector growth rate in Nigeria from 1970 to 2018 through the following specific objectives: (i) evaluate the impact of import penetration on real manufacturing growth rate; (ii) examine the impact of export penetration on real manufacturing growth rate; (iii) investigate the impact of average manufacturing capacity utilization rate on real manufacturing growth rate;(iv) evaluate the impact of monetary policy rate on real manufacturing growth rate; (v) examine the impact of domestic demand on real manufacturing growth rate; (vii) investigate the impact of exchange rateon real manufacturing growth rate and (viii) examine the impact of liberalization or restrictive policies using dummy variable for structural adjustment programme on real manufacturing growth rate.

The rest of this paper is divided into the following sections: section two is literature review; section three is methodology; section four is results and discussion; section five is conclusion and recommendations for policy.

2. LITERATURE REVIEW

2.1 Theoretical Framework (The Theory of Structural Change and Patterns of Development)

The patterns-of-development analysis of structural change by Chenery (1979) as presented in Todaro and Smith (2015) centers around the successive cycle through which the economic, industrial, and institutional design of a low-income economy is changed over the long haul to allow new ventures to supplant conventional agriculture as the driving force of economic growth. The theory considers savings and investment as important component but not satisfactory requirement for economic growth. Besides accumulating productive resources in the form trained labour and infrastructure, a bunch of interrelated changes in the economic apparatuses of a nation are needed for the progress from a simple economic structure to an advanced one. This transformation requires all facets of the economic role of a country including the supply and demand for different categories of products and their technical requirements, cross border movement of products and services and the engagement of factors of production as well as changes in other significant factors such as urbanization and the development and dissemination of a nation's populace.

Empirical structural change experts underscore both domestic and global imperatives for development. The domestic ones incorporate economic imperatives including a country's resources endowment and its physical and population size, alongside institutional imperatives in the form of government policies and targets. Global imperatives on development incorporate access to foreign capital, technology and foreign trade. Variations in the level of growth among less developed nations are generally credited to these domestic and global requirements. In any case, it is the global imperatives that make the transformation of present developing countries vary from that of now industrialized nations. To the degree that less developed nations have access to the opportunities provided by the industrial nations as sources of capital, technology, and manufacturing import, alongside export markets, they can make the change at a significantly quicker rate than that accomplished by the industrialized nations during the early times of their economic growth. Hence, the structural change model identifies the fact that developing nations are part of an integrated global framework that can advance (just as frustrate) their development.

Thus, this theory presents the theoretical basis for assessing the interaction between the adoption of SAP in Nigeria from 1986 and the realities on ground. The SAP was meant to transform the Nigerian economic structure from agrarian to one which could harness her resource endowment in manufacturing, reduce the scope of the public sector in enterprises to encourage private sector participation as well as liberalize the foreign exchange market to a sizable extent based on free market competition to enhance international trade. More specifically, the domestic and international constraints identified in the theory are useful elements in evaluating the extent to which the SAP achieved its objectives.

2.2 Empirical Literature

A number of studies have presented empirical results estimating the contribution of freer trade to productivity performance. Njikam and Cockburn (2011) assessed the effects of trade liberalization on firm productivity growth in Cameroon's manufacturing industry for the period 1988/89 to 2001/02. The study employed firm-level data to derive the productivity for the firm using the method by Levinsohn and Petrin (2003). Afterwards, the effects of trade liberalization on firm productivity growth was determined by a regression framework; with variables including import penetration, export shares, and effective protection measuring the extent of trade liberalization. The results from the estimation showed that increases in export shares, and reductions in effective protection led to improvements in the productivity of Cameroon's manufacturing firms. On the other hand, import penetration did not have significant effect on firm productivity growth. The study concluded that trade liberalization was beneficial to the improvement of firm productivity growth rates.

Bigsten, Gebreeyesus, and Söderbom (2016) analyzed the impact of trade policy reforms on manufacturing firms in Ethiopia. The study using firm-level panel data and commodity-level data on imports and tariffs focused on the import liberalization aspect of the trade policy reforms. The results indicated that the reduction in input tariff was statistically significant in explaining increases in firm productivity. But, the estimate of the output tariff was insignificant. In this light, the study concluded that there would be productivity losses if domestic producers are protected through high tariffs thus, stressing the point that imports could be an important alternative source for improving productivity. Worthy of note was their conclusion that output tariffs are economically insignificant.

Driver (2019) completed a review appraisal of the impacts of exchange arrangements on South African manufacturing sector since the progress to majority rule government, inspecting the distinctions and similitudes in the perspectives on financial specialists for and against a speeding up of exchange advancement. Information from the Bureau of Economic Research were utilized to test various consequences for manufacturing industry that were imagined to move from trade strategy changes, impacts for mark-ups, efficiency, exports, job creation, and investment. The investigation uncovered that an increasing real exchange rate brings about falling unit of inputs costs as expected. In any case, exporter benefit actually endures in light of the fact that the increase additionally falls, probably to hold costs back from rising a lot in unfamiliar monetary standards. There is proof that a real appreciation makes the export volume decline.

Puruweti (2017) examined the effect of free trade on economic efficiency for some African nations over the time frame 1980 – 2014. To test whether free trade influenced various areas in an unexpected way, disaggregated information were utilized. Applying

a pooled ordinary least squares procedure, the outcomes uncovered a general positive effect of free trade on manufacturing and service value added. Concerning different variables, the investigation found that capital additionally contributes decidedly to both generally and sectoral value added while work profitability is negative for all with the exception of service value added. The negative connection among work and yield was disclosed by diminishing returns to scale and poor service administration, contending that most agricultural nations are capital obliged henceforth they wind up utilizing a ton of work to a degree of causing decreasing minimal profitability of work. In view of these outcomes the investigation uncovered that more noteworthy free trade can invigorate output in non-industrial nations. Considering the above it was subsequently, suggested that African nations should actualize reformist and sectoral free trade.

Hu and Liu (2012) investigated the role of freer trade on the efficiency of manufacturing firms in Chinese through panel data covering the period of 2000 to 2006. The variables included were: total factor productivity, industry-level output tariff, industry-level input tariff, firm characteristics such as ownership, export orientation and firm size, industry effect and year fixed effect. The findings revealed that tariff reduction significantly depressed Chinese firms' productivity. This was attributed to the production scale reducing effect of output tariff reduction, which made foreign produced goods more price competitive in the Chinese market. That the Chinese firms' profit margin fell as a result of lower output tariffs affirms the competitive pressure created by output tariff liberalization. On the other hand, through the intermediate inputs' channel, trade liberalization significantly boosted the productivity of Chinese firms and increased their profit margin.

Ahmed, Khan and Afzal (2015) analyzed trade progression and industrial profitability in Pakistan from 1980 to 2006 utilizing the Cobb-Douglas production function approach. The variables of concern were industrial value added, effective rate protection, energy, capital, labour cost and raw material. The outcomes uncovered that trade progression proxied by excise duty unimportantly affected industrial value added in the pre-progression just as in the post-progression periods. Then again, restriction had enormous negative effect on industrial value added in post-progression than in the pre-progression time frame.

Zenebe (2016) used firm level panel data from 2000 -2009 to study the effect of tariff changes on firm level productivity, firm exit, and industry resource reallocation in Ethiopian manufacturing firms. The study employed the difference-in-difference regression framework with time and industry dummies to control for unobserved macro-economic shocks and industry specific characteristics. The results show evidence of increased productivity after liberalization and resource reallocation in several industries as expected from the theoretical literature. However, there are heterogeneous impacts across sectors. There was no evidence for firm exit after tariff reductions due to direct competition effects from lower cost imports but the tariff reductions affect firm decisions to exit via their effect on productivity.

In Nigeria, Adenikinju and Chete(2002) explored the nexus between trade liberalization and firms' productivity performance while controlling for market structure. The study covered the period of (1988 – 1990). The study used simple average tariffs rate, quota weighted effective protection rate, and import and export penetration indexes as proxy for trade liberalization while controlling for market structure. From the results obtained, both the average nominal tariff rates and the effective rate of protection had a negative and significant effect on productivity. While the export growth index influenced the level of productivity positively the estimated import growth coefficient was statistically insignificant. Based on this finding, the study concluded that significant pay-offs accrue through trade liberalization, but cautioned the pace of import liberalization since an import policy may have negative effects on productivity.

Umoh and Effiong (2017) explored the impact of free trade on manufacturing outcomes between 1970 and 2013 using the autoregressive distributed lag. Their study used manufacturing index alongside other such interest rate spread, nominal exchange rate as explanatory variables. Their results showed the manufacturing sector better improved as a result of trade liberalization in both the immediate and long term periods. The coefficient estimates were robust and stable over the time. They thus recommended that, the policy direction for the sector be focused more on open policies through trade liberalization as a long-term plan.

Akinmulegun and Oluwole (2014) study the outcomes of the manufacturing sector in Nigeria in the face of liberalization adopting the ordinary least squares technique. Regressing trade openness and current account balance on manufacturing output, it was shown that though liberalization exerted significant positive impact on the sector, the level of advancement on the sector was small.It was suggested that the government should stimulate policies that will encourage domestic investment particularly lower the lending rate, build critical infrastructure and legal framework.

Ali, Obayori and Obayori (2018) investigated the impact of globalization on output growth in Nigeria's manufacturing sector between 1980 and 2016 using the parsimonious error correction model. Output growth was the explained variable while trade intensity index, restrictions on trade and portfolio investment stock were explanatory variables. The results showed that output growth lagged for one period was positively related to current ouput growth. Also, trade intensity index significantly influenced output growth. Conversely, trade restrictions inversely impacted on output growth while portfolio investment had insignificant negative influence on output growth on the sector. The study recommended that policy makers should ensure that Nigeria leveraged on the gains of globalization by focusing on producing and exporting value added products in which it enjoins greater access and cost effectiveness.

Ogu, Aniebo and Elekwu (2016) in their examination analyzed the effect of trade liberalization on manufacturing output, zeroing in on the short to medium term periods while not disregarding the vital long run on which most investigations have centered covering the time frame somewhere in the range of 1980 and 2013 utilizing the error correction mechanism. Exchange progression was found to hurt manufacturing output in the short run despite the fact that it showed a genuine potential to help it in the long run.

Ebenyi, Nwanosike, Uzoechina and Ishiwu (2017) evaluated the effect of trade openness on the index of manufacturing production in Nigeria somewhere in the range of 1970 and 2014 utilizing the autoregressive distributed lag. Their discoveries uncovered that the Nigerian economy has not changed its export structure over the 1970 - 2014 periods. The only changes that have occurred to its export were only a simple shift in export composition demonstrating an indication of export replacement from essential agro industry-based export to essential mining industry-based export (i.ecrudeoil). Subsequently, they discovered significant negative effect of intermediate import on the manufacturing sector. The investigation subsequently concluded that the fragility of the sector to react emphatically to the export possibilities inborn in exchange advancement is because of significant expense of production in the country that places producing output in a disadvantageous situation in worldwide market.

Akims (2017) investigated the impacts of trade liberalization on outcomes of the manufacturing sector in Nigeria by explicitly deciding the consequences for firm efficiency, export, and competitiveness utilizing quarterly firm-level data from the study of manufacturing industry in Nigeria for the time frame 2008 to 2010. The detailed data for firms in coordinated companies depending on their area, industry movement and size qualities. Fitting Fixed Effects and Random Effects assessment strategies were utilized for the investigation. The outcomes showed that while the import part of exchange progression hinders efficiency, the export segment improves profitability. Subsequently, measures pointed toward empowering exports would be moderately more viable in improving profitability. Likewise, the discoveries showed that higher profitability doesn't impact the choice on whether a firm would take part in exports, however higher efficiency builds the portion of exports in all out deals for firms that are as of now taking an interest in foreign markets. Moreover, the outcomes give some proof on the import discipline impact of exchange progression along these lines bearing witness to the thought that trade liberalization is a channel through which the intensity of firms in the assembling business in Nigeria can be developed.

Adofu and Okwanya (2017) evaluated the impact of trade liberalization and total factor efficiency on manufacturing output in Nigeria covering the time frame 1981-2015. Utilizing vector autoregressive (VAR) model in assessing the impact of trade liberalization on industrial output, the impulse response function and variance decomposition were utilized to look at the reaction of manufacturing output to shocks in openness and total factor productivity. The outcomes showed that liberalization has a positive expanding impact on industrial output in Nigeria while the impact of total factor productivity on industrial output was seen to be insignificant. The impulse response function revealed that in the long run total factor productivity had negative impact on industrial yield in Nigeria.

Literature Gap

From the empirical literatures, it is crystal clear that there exists a plethora of studies and findings on the relationship between trade liberalization and manufacturing sector performance. However, most of the studies at the global level including Njikam and Cockburn (2011) for Cameroon, Bigsten, Gebreeyesus, and Söderbom (2016) for Ethiopia, Hu and Liu (2012) for China, Zenebe (2016) etc, used firm level panel data with the aim to isolate firms participation in foreign trade and the influence of trade policy on manufacturing productivity. Also, in Nigeria, Adenikinju and Chete (2002) provided firm level evidence on the effects of trade liberalization on productivity in the Nigerian manufacturing sector for the period 1988-1990. Akims (2017) built on the work of Adenikinju and Chete (2002) by estimating the influence of productivity on the share of sales exported using firm level data between 2008 and 2010. Beyond 2010 covering a record period of a decade, deliberate steps have been undertaken by the government of Nigeria towards greater liberalization of trade and in some cases restriction of trade whose cumulative intended effects are unknown, necessitating additional research. Most of the studies that used aggregate macroeconomic time series data focused on conventional variables of interest rate, exchange rate and trade openness without much details on the channel through which foreign trade policy impact on manufacturing sector performance in Nigeria.

This study bridged this gap by separating the impact of imports from that of exports on real manufacturing sector growth rate using import penetration given as the ratio of import to gross domestic product (IMGDP) and export penetration given as the ratio of export to gross domestic product (EXGDP) alongside dummy variable for structural adjustment programme.

3. METHODOLOGY

The study made use of mainly macroeconomic secondary time series data which were sourced from National Bureau of Statistics, Central Bank of Nigeria data bank such as the statistical bulletin and annual report and statement of Accounts of various years as well as the World Bank Data Base. Periodicals and other internet sources were also of invaluable use to this study. These time series data covered the period from 1970 to 2019. The study employed pre-estimation tests to ensure accuracy of the parameter estimates and their forecasting power such as the correlation test for multicollinearity, Augmented Dicey Fully (ADF) test for unit root and

autoregressive distributed lag bound testing for cointegration for the existence of cointegration. The post estimation tests include Ramsey RESET for evaluation of model specification and Breusch-Godfrey test for serial correlation.

3.1. Model Specification

Adopting the theory of structural change and patterns of development by Chenery (1979)with modifications and in line with Umoh and Effiong (2017), this study utilized autoregressive distributed lag (ARDL) approach through bound testing to cointegration found as the appropriate econometric technique arising from the order of integration of the time series variables used for this study. Consequently, the functional form of the real manufacturing growth rate (RMGR) model is given as follows:

$$RMGR = f(IMPGDP, EXGDP, AMCUR, MPR, LnPCI, EXR, DSAP) \quad (3.1)$$

Where:

RMGR = Real Manufacturing Growth Rate
IMPGDP = The Ratio of Imports to GDP (import penetration)
EXPGDP = The Ratio of Exports to GDP (export penetration)
AMCUR = Average Manufacturing Capacity Utilization Rate
MPR = Monetary Policy Rate
LnPCI = Log of Per Capita Income (proxy for labour income and domestic demand)
EXR = Exchange Rate
DSAP = Dummy variable for Structural Adjustment Programme

Expressing equation 3.1 using the autoregressive distributed lag (ARDL) procedure yields:

$$RMGR_t = \beta + \sum_{i=0}^{n} \beta_{1i}\Delta RMGR_{t-i} + \sum_{i=0}^{n} \beta_{2i}\Delta IMGDP_{t-i} + \sum_{i=0}^{n} \beta_{3i}\Delta EXGDP_{t-i} + \sum_{i=0}^{n} \beta_{4i}\Delta AMCUR_{t-i} + \sum_{i=0}^{n} \beta_{5i}\Delta MPR_{t-i} + \sum_{i=0}^{n} \beta_{6i}\Delta LnPCI_{t-i} + \sum_{i=0}^{n} \beta_{7i}\Delta EXR_{t-i} + \sum_{i=0}^{n} \beta_{8i}\Delta DSAP_{t-i} + \beta_9 RMGR_{t-1} + \beta_{10} IMGDPt_{-1} + \beta_{11} EXGDP_{t-1} + \beta_{12} AMCUR_{t-1} + \beta_{13} MPR_{t-1} + \beta_{14} LnPCI_{t-1} + \beta_{15} EXR_{t-1} \beta_{16} DSAP_{t-1} + \varepsilon_{1t} \quad (3.2)$$

where Δ is the first difference operator,β_{1i}, β_{2i}, β_{3i}, $\beta_{4i,}\beta_{5i,}$ $\beta_{6i,}$ $\beta_{7i}$and β_{8i}indicate the short-run dynamics in the above relations, while β_9, β_{10}, β_{11}, $\beta_{12,}$ $\beta_{13,}$ $\beta_{14,}$ β_{15} and β_{16}denote the long-run association in equation 3.2. To identify if all the series are cointegrated, the Bound test or F-statistic is computed to test the null hypothesis, H_0:$\beta_9 = \beta_{10} = \beta_{11} = \beta_{12} = \beta_{13} = \beta_{14} = \beta_{15} = \beta_{16} = 0$ against the alternative hypothesis, H_1: $\beta_9 \neq \beta_{10} \neq \beta_{11} \neq \beta_{12} \neq \beta_{13} \neq \beta_{14} \neq \beta_{15} \neq \beta_{16} \neq 0$ for model 3.2. The critical Bounds test values at 5% or 1% obtained from Pesaran et al. (2001) is compared with the Bound or F-statistic. If the computed Bound or F-statistic exceeds the upper bound I(1), the null hypothesis of no cointegration is rejected. The implication of this is that there exist long-run associations among all the series. However, if the Bound or F-statistic falls between the upper and lower bounds, no conclusive inference is made. If the computed Bound or F-statistic falls below the lower Bound I(0), the null hypothesis of no cointegration is retained. The specific form of the ECM estimated for RMGR as a measure of manufacturing sector performance in Nigeria takes the form:

$$RMGR_t = \beta_0 + \sum_{i=0}^{n} \beta_1 RMGR_{t-1} + \sum_{i=0}^{n} \beta_2 \Delta X_{t-1} + \beta_3 ECM_{t-1} + \varepsilon_{2t} \quad (3.3)$$

whereX_t is the vector of matrix representing a set of explanatory variables, ECM_{t-1} is the error correction term and it captures the speed of adjustment back to the long run after a short run shock and ε_{2t} is the stochastic error term. The result of the Wald test provides evidence for the existence of cointegration, thus, we proceed to the next step to identifying the coefficients and the significance level. The optimal lag order is selected using Akaike Information Criterion (AIC). After identifying the optimal lags, the long run ARDL model through bound test and error correction model are estimated. To check whether the estimated ARDL model is valid or not, we adopted a better form of diagnostic test using Ramsey RESET for evaluation of model specification and Breusch-Godfrey test for serial correlation.

3.2 Justification of the Variables

The real manufacturing growth rate (RMGR) is manufacturing sector output growth rate adjusted for inflation. It is the dependent variable in this study. Import penetration (IMGDP) and export penetration (EXGDP) are explanatory variables and measures of foreign trade. While IMGDP is a measure of the volume of foreign production or domestic demand for foreign goods and services met by imports, EXGDP measures the volume of domestic production or foreign demand for goods and services met by exports. The justification for these variables is to separate the effect of the degree of openness and identify the separate effect of either trade restriction or liberalization policy on the volume of imports or exports. Monetary policy rate (MPR) is the rate at which the central bank lends to the deposit money banks. It is used as a control variable. Basically, since all money market rates are determined by this rate, it determines access to or affordability of credit to the manufacturing sector. The log of per capita income (LnPCI) is national income divided by population logged. It is used as a proxy for domestic demand for manufactured goods. Exchange rate (EXR)is added because it has significant influence on imports and exports of a country. Specifically, high demand for imports increases the demand for foreign exchange which without a corresponding foreign demand for exports leads to depreciation of the domestic currency. The dummy variable for structural adjustment programme (DSAP) is used to measure the two main trade policies

identified in this study: trade restriction and trade liberalization. Zero dummy represents restrictive policy while one dummy is for liberalization. This is important for qualitative variables analysis.

3.3 Apriori Economic Expectations

The a priori economic expectations of the above ARDL models with respect to the sign and magnitude of the parameter coefficients are stated from equations 3.2 as seen below:

$$\beta_1 > 0, \beta_2 >< 0, \beta_3 > 0, \beta_4 > 0, \beta_5 < 0, \beta_6 > 0, \beta_7 >< 0 \text{ and } \beta_8 >< 0.$$

From equation 3.2, increase in previous year's real manufacturing growth rate ($RMGR_{t-1}$) is expected to increase RMGR in both the short run and the long run. There is bidirectional relationship between import penetration (IMGDP) defined as the ratio of imports to GDP and RMGR implying that imports intermediate and capital goods as inputs for further production processes can enhance RMGR while the imports of consumer goods would retard RMGR. Exports penetration (EXGDP) defined by the ratio of exports to GDP is expected to increase RMGR. Increase in average manufacturing capacity utilization rate (AMCUR) is also expected to increase RMGR, while there exists inverse relationship between monetary policy rate (MPR) and RMGR. Increase the log of per capita income as a proxy for labour income and domestic demand is positively related to RMGR. Exchange rate has a bidirectional relationship with RMGR. That is, appreciation of the naira exchange rate is expected to reduce the export of manufactured goods and thus retard RMGR while devaluation or depreciation is expected to stimulate export of manufactured goods and increase RMGR. The dummy variable for structural adjustment programme (DSAP) using 1 for periods of trade liberalization and 0 for periods of trade restrictiveness also exerts a bidirectional relationship with RMGR. This implies that a significant positive impact of DSAP represented by its coefficient and P-value increases RMGR and vice versa, and a significant positive impact of the constant coefficient of the RMGR model increases RMGR and vice versa.

4. RESULTS AND DISCUSSION

4.1 Correlation Test Result for RMGR Model

Gujarati and Porter (2009) noted that correlation values within 0.1 to 0.49 indicate insignificant or small multicollinearity between two explanatory variables, correlation values within 0.5 to 0.79 indicate average multicollinearity while from 0.80 and above is an indication of the existence of severe multicollinearity between two explanatory variables. They argued that minimum to average multicollinearity is allowed between two economic variables. Thus, the correlation matrix results for the selected explanatory variables are presented below.

Table 4.1 Correlation Matrix Result for RMGR Model

	IMGDP	EXGDP	AMCUR	MPR	LNPCI	EXR	DSAP
IMGDP	1						
EXGDP	0.376774	1					
AMCUR	-0.050983	-0.022917	1				
MPR	-0.301633	-0.050633	-0.599657	1			
LNPCI	-0.232730	-0.210003	0.387869	-0.034830	1		
EXR	-0.175084	0.043413	-0.008480	0.307941	0.660429	1	
DSAP	-0.227771	0.292251	-0.436760	0.691217	0.207913	0.398499	1

Source: Author's computation with the use of E-views9

From table 4.1.1, it is seen that the respective independent variables had correlation values of less than 0.8 implying the absence of severe multicollinearity between the sets of all two explanatory variables used for this study.

4.2 Unit Root Test Result for RMGR Model

We examined the order of integration of the selected variables. Although the ARDL bounds test is applicable irrespective of whether the variables are purely I(0), purely I(1) or fractionally integrated, the presence of the I(2) variables renders the computed F-statistics by Pesaran et al. (2001) invalid. This is because the bounds test assumes that the variables are either I(0)or I(1). Therefore, unit root testing becomes mandatory to ensure that no variable is integrated at an order I(2)or beyond. The conventional Augmented Dickey–Fuller (ADF) test of Dickey and Fuller (1981) was used which allows a mild assumption on the distribution errors and controls for higher serial correlation and heteroscedasticity.

Table 4.2 ADF Test Results for RMGR Model

Variables	ADF Statistics		Probability Values		Order of Integration
	Levels	1st Difference	Levels	1st Difference	
RMGR	-2.846923	-6.994930***	0.0000	0.0002	I(1)
IMGDP	-4.444790***	……ψ	0.0046	……ψ	I(0)

EXGDP	-2.926942	-7.189253***	0.1635	0.0000	I(1)
AMCUR	-1.516314	-5.153984***	0.8084	0.0007	I(1)
MPR	-2.487758	-7.230837***	0.3326	0.0000	I(1)
LNPCI	-1.645637	-5.381245***	0.7596	0.0003	I(1)
EXR	-0.817055	-5.979236***	0.9567	0.0000	I(1)

Notes: ***, ** and * denote rejection of the null hypothesis of stationary at the 1%, 5% and 10%, significance level, respectively. The null hypothesis is stationary around a trend and intercept.

Source: Author's computation with the use of E-views9

From table 4.2 it is shown that Real manufacturing Growth Rate (RMGR) was integrated of order one I(1), import penetration (IMGDP) was stationary at levels and at the one percent level of significance implying that the variable was integrated of order zero I(0). Export penetration (EXGDP), Average Manufacturing Capacity Utilization Rate (AMCUR), Monetary Policy Rate (MPR), Log of Per Capita Income (LnPCI) and Exchange Rate (EXR) were all stationary after first difference and at the one percent level of significance denoting that these variables were integrated of order one I(1) . The unit root test for these variables were all stationary around their trend and intercept.

4.3 Cointegration Analysis for RMGR Model

After identifying the time series properties, the existence of the long run relationship was tested. We employed ARDL model through Bound test to identify the presence of long run relationship among all the series. Because the result of ARDL procedures is sensitive to the lag length, the lag length is carefully selected. This study followed Pesaran et al. (2001) recommendation to use AIC in choosing lag length. Consequently, the selected model of ARDL (2, 0, 1, 2, 0, 1, 1, 0) was used to examine the long run relationship among all the variables. The Bound test result is shown on Table 4.1.3. The F-statistic of 4.062277 was found to be higher than the upper critical bound value of 3.5 at the 5 percent significance level benchmark and by extension higher than the critical upper bound value of 3.84 at the 2.5 percent. Thus, the result concludes that there is a long-run relationship among all the variables, namely, real manufacturing growth rate, import penetration, export penetration, average manufacturing capacity utilization rate, monetary policy rate, per capita income (proxy for domestic demand), exchange rate and the dummy for structural adjustment programme. In other words, these variables would move together in the long run.

Table 4.3 ARDL Bound Testing Cointegration Analysis for RMGR Model

F-Statistics
4.062277

Pesaran, Shin and Smith (2001): Unrestricted trend and intercept, k = 6

	Critical Value Bounds	
Significance	Lower Bound	Upper Bound
10%	2.03	3.13
5%	2.32	3.5
2.5%	2.6	3.84***
1%	2.96	4.26

Notes: Critical values are obtained from Pesaran et al (2001) with trend and intercept, *,**,*** and **** indicate significance at the 10, 5, 2.5 and 1 percent levels; the dummy variable is not included.

Source: Author's computation with the use of E-views9

4.4 Long and Short Run Estimates for RMGR Model

The long-run elasticities were estimated based on the Akaike Information Criterion(AIC), with ARDL [2, 0, 1, 2, 0, 1, 1, 0] as optimal lags length and the results presented in table 4.4. From the results, import penetration (IMGDP) has a significant negative impact on real manufacturing growth rate in Nigeria. Thus, an increase in the share of domestic demand for goods met by import represented by IMGDP is inimical to real manufacturing growth rate as this reduces the demand for locally manufactured products. Specifically, the coefficient of -272.1 implies that a 1 percent increase in IMGDP enormously decreased RMGR by 272.1 percent.

Table 4.4 ARDL Long Run Estimates for RMGR Model

Dependent Variable: RMGR

Variables	Coefficients	Std. Error	t-Statistic	Prob.
IMGDP	-272.111390	326.540929	-0.833315	0.0120
EXGDP	321.133841	249.375021	1.287755	0.0088

AMCUR	160.476755	212.711003	0.754436	0.4571
MPR	210.526063	327.922759	0.641999	0.5263
LNPCI	-2.873480	3.372565	-0.852016	0.0017
EXR	-13.487756	22.201756	-0.607509	0.5486
DSAP	1296.088353	5979.097301	0.216770	0.0300
C	832.696561	9813.772850	0.084850	0.9330

Source: Author's computation with the use of E-views9

Export penetration (EXGDP) representing the share of foreign demand for goods met by domestic firm has a significant positive impact on RMGR and affirms the a priori economic expectation which postulated positive relationship between EXGDP and RMGR. It also justifies the export promotion industrialization strategy adopted in the country over time. Specifically, the coefficient of 321.1 indicates that a 1 percent increase in EXGDP impressively increases RMGR by 321.1 percent. The magnitude of export penetration shows the influence the variable had on real manufacturing growth rate during the period of analysis. Average manufacturing capacity utilization rate (AMCUR) has an insignificant positive impact on real manufacturing growth rate (RMGR). This result may be a reflection of the low manufacturing capacity utilization rate in Nigeria during most of the period of analysis. Thus, AMCUR is not statistically significant in explaining changes in RMGR in the country. Monetary policy rate (MPR) exerts an insignificant positive impact on RMGR. Thus, monetary policy rate in Nigeria during the period of analysis did not explain changes in RMGR in term of manufacturing contribution to gross domestic product in the country. Log of per capita income (PCI) as a proxy for labour income and domestic demand has a significant negative impact on real manufacturing growth rate. The coefficient of -2.9 implies that a 1 percent increase in PCI decreases RMGR by -2.9. This result is in contrast with the a priori economic expectation that postulated a positive relationship between LnPCI and RMGR. It affirms the taste and preference for foreign manufactured products in Nigeria. Thus, increase in per capita income in the country during the period of analysis decreased RMGR and ostensibly in favour of imported goods arising from the paste and preference for foreign goods. Exchange rate has an insignificant negative impact on RMGR. This implies that changes in EXR were not statistically significant to RMGR during the period of our analysis. There are two sides to the dummy variable for structural adjustment programme (DSAP). First, the constant coefficient in table 4.4 captures the period restriction of trade spanning from 1970 to 1986. The coefficient is positive but statistically insignificant implying that trade restriction had no significant impact on RMGR in Nigeria. The second is the coefficient of the dummy for SAP which has a significant positive impact on RMGR. This implies that trade liberalization policies undertaken from the structural adjustment programme era till 2018 impacted positively on the real manufacturing growth rate.

4.5 Short Run Estimates of RMGR Model

The result of the ECM is reported in table 4.5 as CointEq(-1) following the E-views9 statistical software. We used ECM model purposely to reveal the behavior of RMGR and to examine the speed of change as a reaction to takeoffs from the long-run equilibrium. The coefficient of the ECM is found to be negative and statistically significant with above average speed of approximately 57.05 percent of long-run disequilibrium adjusted from lagged period error shocks. Diagnostic tests of serial correlation through Lagrange multiplier (LM) test and parameter stability through the Ramsey reset test are conducted. The result of the LM test shows no serial correlation exist given the P-value of 0.21 necessitating the retention of the null hypothesis of no serial correlation and the Ramsey reset test shows no evidence of instability of the error correction model. In other words, the error correction model can be said to be stable with a P-value of 0.5467. The adjusted R-squared (R^2) is considered high at 0.76 approximately. Accordingly, table 4.5 shows the short run estimates of the RMGR model.

Table 4.5 ARDL Short Run Estimates for RMGR Model

Dependent Variable: D(RMGR)				
Variables	Coefficients	Std. Error	t-Statistic	Prob.
D(RMGR(-1))	-0.245767	0.098865	-2.485894	0.0194
D(IMGDP)	-155.238796	179.719057	-0.863786	0.0053
D(EXGDP)	507.727521	118.900922	4.270173	0.0002
D(AMCUR)	472.613613	205.956772	2.294722	0.0298
D(AMCUR(-1))	-392.845009	240.206037	-1.635450	0.1136
D(MPR)	120.104537	184.587598	0.650664	0.5208
D(LNPCI)	18.898621	2.369803	7.974765	0.0000
D(EXR)	168.512164	41.263034	4.083853	0.0004
DSAP	739.414821	3458.329912	0.213807	0.8323
CointEq(-1)	-0.570497	0.160658	-3.551005	0.0014

Diagnostic Tests
Adjusted $R^2 = 0.89$
Ramsey Reset= 0.5467
LM Test = 0.21

Notes: LM test is the Lagrange multiplier for serial correlation test. Ramsey reset test is used as test of stability of the residuals.
Source: Author's computation with the use of E-views9.

In table 4.5 change in the lagged value of real manufacturing growth rate D(RMGR(-1)) exerted a significant negative impact on the current value of RMGR. The D(RMGR(-1)) coefficient value of -0.245767 implies that previous year's value of RMGR decreases the current year's value by 0.245767 percent. This result is justified as RMGR in Nigeria was successively negative for three years before becoming positive in 2018. That is, in 2015 RMGR was -1.46, the value decreased further to -4.32 in 2016 but later appreciated to -0.21 in 2017 before attaining a positive value of 2.09 in 2018. Thus, lagged value of RMGR decreased the current value of RMGR. Change in import penetration D(IMGDP) has a significant negative impact on RMGR. This implies that the share of domestic demand met by import decreases RMGR by the coefficient -155.238796 in the short run. Change in export penetration D(EXGDP) has a significant positive impact on RMGR which implies that the share of foreign demand met by export increases RMGR by the coefficient of 507.727521. Change in average manufacturing capacity utilization D(AMCUR) exerts a significant positive impact on RMGR. However, the lagged value D(AMCUR(-1)) an insignificant negative impact on RMGR. Change in monetary policy rate D(MPR) on its part exerts insignificant positive impact on RMGR as the case in the long run. Change in the of per capita income D(LnPCI) has a significant positive impact on RMGR. This result is in contrast with the long run estimate but confirms the a priori economic expectation. It implies that change in per capita income increases RMGR in the short run. Change in exchange rate in the short run exerts a significant positive impact on RMGR. The dummy variable for structural adjustment programme exerts an insignificant positive impact on RMGR implying that trade liberalization was not statistically significant in explaining changes in RMGR in the short run.

5. CONCLUSION AND RECOMMENDATION FOR POLICY

Following the results of the key proxies of foreign trade policy which included import penetration, export penetration and the dummy variable for structural adjustment programme, this study concludes that while trade liberalization has no significant impact on real manufacturing growth in the short run, the impact in the long run is positive and significant.

The study recommended policies that would encourage the importation of capital goods to enhance manufacturing productivity in Nigeria. Also, to boost sustained production of manufactured goods for both domestic consumption and export, there is urgent need for the Central Bank of Nigeria to further reduce its monetary policy rate from its current 11.5 per cent to 7.5 per cent to make loanable funds attractive for investors. Lastly, there should be collaboration by all stakeholders to create the enabling environment for short term maximization of the gains of trade liberalization particularly in the energy supply. Specifically, investors, communities, states, and local governments should take advantage of the "embedded generation regulation" of the Nigerian Electricity Regulatory Commission which allows for power generation plants (including renewable energy) to be directly connected to and evacuated through a distribution network, to generate and sell or utilize power without going through the transmission grid as an approach to addressing the perennial problem of energy supply that has crippled the manufacturing sector.

REFERENCES

1) Adebayo, A. (1998). *Economics*: *A simplified approach (2nd., Vol. 1)*. African International Publishing Limited, Lagos, Nigeria.
2) Adenikinju, A. F. (2005). African imperatives in the new world trade order: Country case study of the manufacturing sector in Nigeria. In Ogunkola, O.E. and A. Bankole (Eds.). *Nigeria's imperative in the New World Order.* Nairobi: Africa Economic Research Consortium pp. 101 - 158.
3) Adenikinju, A. F., &Chete, L. N. (2002). Productivity, market structure and trade liberalization in Nigeria. *African Economic Research Consortium Research Paper No. 126,* Nairobi: Africa Economic Research Consortium.
4) Adofu, I., &Okwanya, I. (2017). Linkages between trade openness, productivity and industrialization in Nigeria: A co-integration test. *Research in World Economy*, 8(2): 78– 87.
5) Ahmed, G., Khan, M.A., & Afzal, M. (2015). *Trade liberalization and industrial productivity: Evidence from Pakistan*. Retrieved 15th September, 2019 from: https://mpra.ub.uni-muenchen.de/70744/MPRA Paper No. 70744, posted 15 April 2016 07:17 UTC.
6) Akims, A.K. (2017).Trade liberalization and performance of the manufacturing sector in Nigeria.*Journal of Development Studies,* 52(7), 986 – 1001

7) Akinmulegun, S. O., &Oluwole, F.O. (2014).An assessment of the Nigerian manufacturing sector in the era of globalization. *American Journal of Social and Management Sciences,*5(1), 27-32.
8) Ali, V., Obayori, E. L., &Obayori, J. B. (2018). Globalization and manufacturing sector growth in Nigeria.*International Journal of Advanced Studies in Ecology, Development and Sustainability*, 5(1), 54 – 64.
9) Bigsten, A., Gebreeyesus, M., &Söderbom, M. (2016). Tariffs and firm performance in Ethiopia. *Journal of Development Studies*, 52(7), 986 – 1001.
10) Central Bank of Nigeria (2005). Annual Report and Statement of Account for the Year Ended, 31st December, Abuja.
11) Central Bank of Nigeria (2018). Statistical Bulletin, Abuja: CBN.
12) Driver, C. (2019). Trade liberalization and South African manufacturing. *United Nations University World Institute for Development Economics Research,* 1(1), 1 – 20.
13) Ebenyi, G.O., Nwanosike, D.U., Uzoechina, B., &Ishiwu, V. (2017). The impact of trade liberalization on manufacturing value-added in Nigeria. *Saudi Journal of Business and Management Studies,* 2(5A), 475 – 481.
14) Federal Government of Nigeria (2001). *Report of the Vision 2010 Committee: Economic sectors and issues*, Abuja: Vision 2010 Committee.
15) Gujaraji, D.N., & Porter, W.C. (2009). *Basic Econometrics.* (5th ed.).New York:McGraw Hill
16) Hu, A.G., & Liu, Z. (2012). Trade liberalization and firm productivity: Evidence from Chinese manufacturing industries. *Journal of International Economics,* 71 (1), 52 - 71.
17) Levinsohn, J., &Petrin, A. (2003). Estimating production functions using inputs to control for unobservables. *Review of Economics Studies*, 70*(*2), 317 – 342.
18) Lokonathan, V. (1973). *A history of economic thought.* A Chand and company Ltd, Ram Nagar, New Delhi.
19) Njikam, O., & Cockburn, J. (2011). Trade liberalization and productivity growth: Firm-level evidence from Cameroon. *The Journal of Developing Areas,* 44 (2), 279 – 302.
20) Ogu, C., Aniebo, C., &Elekwa, P. (2016). Does trade liberalization hurt Nigeria's manufacturing sector? *International Journal of Economics and Finance,* 8(6), 175 – 180.
21) Pesaran, M.H., Shin, Y., & Smith, R. (2001). Bounds testing approaches to the analysis of the level relationships. *Journal of Applied Econometrics,* 16, 289-326.
22) Puruweti, S. (2017). Can trade openness stimulate output performance? A case of selected African countries.*Siyakiya, Journal of International and Global Economic Studies,*10(2), 55-67.
23) Szirmai, A. (2009). Is manufacturing still the main engine of growth in developing countries? WIDER *Angle newsletter, may*.
24) Todaro, P. M., & Smith, C. S. (2015). *Economic development* (12th ed.). New York: Pearson Press.
25) Umoh, J.O., &Effiong, L.E. (2017). Trade openness and manufacturing sector performance in Nigeria. *Journal of Applied Economic Research*, 7 (2), 147–169.
26) World Bank (1991). *World development report 1991: The challenge of development:* New York. Oxford University Press.
27) World Bank (2018). *World Development Indicators*. Retrieved 20th September 2019 from data.worldbank.org/data-catalog/world-development-indicators.
28) Zenebe, K.D. (2016). Trade liberalization, productivity, and firm exit in manufacturing firms in Ethiopia. *World Development*, 86(1), 18–29.