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Trade Liberalisation and Selected Manufacturing Sectoral Groups in Nigeria

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***Abstract*— This paper investigates the impact of Trade Liberalization on some selected manufacturing sectoral groups: Food, Beverages & Tobacco (FBT); Cement (CEM) and Basic Metal, Iron & Steel (BM) in Nigeria. Using the DOLS technique of analysis. Trade liberalization was proxied with Trade Openness (OP); other variables expressed exogenously were Labour Force (L), Foreign Direct Investment inflow into manufacturing sector (FDI) and Exchange Rate (EXCH). The results of analysis led to the conclusion that trade liberalization does not have significant impact on FBT,CEM, and BM in Nigeria. FDI is positively signed and thus have direct impact on the three sub-sectors. The policy implication of the afore-mentioned results of analysis is that FBT, CEM, and BM sub-sectors in Nigeria benefitted chiefly from Foreign Direct Investment inflow, which finds expression in innovative processing ideas, new technologies, capacity building for employees, world class managerial suite of skillsand more. Also, the coefficient of the labor force (L)is positive and impacts on FBT model suggest that FBT sub-sector employed more people than others, especially under trade liberalization regime. Government therefore should urgently re-strategize and synergies her foreign trade policies with industrial policies to facilitate beneficial trade. For instance, the Government needs to do a proper assessment of the African Continental Free Trade Area Framework before signing on to the agreement, create manufacturing and investment friendly climate. This will no doubt enhance the performance of these sub-sectors, facilitate beneficial trade and prevent an avoidable influx of cheap and inferior foreign products that could negatively affect the manufacturing sub-sectors. Again, there is a need to sustain Nigeria's foreign policies that attract more FDI inflow into the economy, particularly to the manufacturing sub-sectors.**

***Index Terms*— Trade Liberalization, Manufacturing Sub-sector,Sectoral Groups.**

I. INTRODUCTION

Bilateral and multilateral exchange of commodities among nations dates back to the era of the barter system. As time progresses, there has been improved global trade system among nations. The dynamism in global trade has been responsible for the deepening of specialization. The net result is an increased number of countries that now engaged in trade that is primarily motivated by the apparent interdependency on one another for resources. Over the years, the process of international exchange of economic goods among nations has impacted positively on world output and equally served as a strategic catalyst for the growth of various economies around the globe.

Interestingly, the evolutionary process of trade means that it has been progressively regulated which necessitated the increasing call for liberalization. Fasan (2015) confirmed this trend that there exists a progressive regulation of trade.

In his view, to eliminate all forms of market imperfections, maintain some relative balance of fairness, prevent undue trade favoritism to political allies and guard against the pursuit of selfish economic interests, the processes of exchange of goods and services in international trade were highly regulated particularly in developing countries.

One important antidote to tame the tide of trade barrier is the emergence of the General Agreement on Tariff & Trade (GATT) in 1948 and the founding of World Trade Organization (WTO) in 1995 as well the ever-emerging Regional Economic Blocs (REBs). The duo of GATT and WTO had deepened the space for developing countries like Nigeria to become active participants in international trade. Without a doubt, Nigeria is a country of significant potentials and opportunities with over 190.9 million people and a growing healthy middle class. The country is abundantly endowed with an array of natural resources which are imperative for industrial production, mainly manufacturing sub-sector. The economy has the largest market size in Africa as supported by the 2017 National Output value of US460.47 billion (constants 2010 US$) and trailed by South Africa with an output value of US$426.77 billion (World Bank, 2017).

One lesson from the World Bank (2017) report is that Nigeria can easily attract a cynosure of investors and trade partners from within and outside the country into her manufacturing sub-sector. Little wonder the Manufacturers' Association of Nigeria(MAN) Economic Review (2017) reported that the Nigerian manufacturing sector is the biggest in ECOWAS and controls the export trade in the region. The sub-sector is made up of ten (10) Sectoral Groups with over 76 Sub-Sectoral Groups manufacturing a variety of products. The sector has consistently contributed to national output. It contributed 4.16% to Real GDP in 2011; 4.2 percent in 2012; and averaged 9.44% from 2013 to 2017. It is hoped that the

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sector would fully rebound to higher performance as the Nigerian economy gradually settles after two years recession bout that resulted from foreign exchange shock.

Accordingly, for Nigeria to enjoy massive benefits inherent in the manufacturing sub-sector, there is a need to embrace the emerging trends in trade liberalization.

Trade liberalization has a process that is impelled by a series of cumulative and conjectural differences in the international division of labor, global distribution of economic and political power. The hallmark of free-market capitalism has been aided among other factors by the sudden though expected changes within the physiology of global political community in recent times (Hirst, Paul, and Thompson, 2002).

Similarly, Akindele (2001) noted the removal of barriers to international trade by countries to trade seamlessly using the multilateral trading system framework was a significant impetus for the acceleration of liberalization of trade for even development amongst trading countries.Onuoha (2009) adds that the protagonists of liberalism argue that trade liberalization is beneficial to developing countries as against the stance of antagonists that it impedes industrialization and job creating in developing nation. Theoretically, it has also been argued that trade liberalization is required to improve the efficiency of local industries and ensure a worldwide optimal allocation of resources.

Sequel to the expected benefits inherent in trade liberalization by economic scholars, in 1986, trade liberalization was introduced in Nigeria as a crucial component of the Structural Adjustment Programme (SAP) which was necessitated by the balance of payments crisis caused by the world oil market glut of the early 1980's (Adenikinji, 2005). This crisis led to the promulgation of Economic Stabilization (Temporary Provisions) Act of 1982 with the core mandate of curtailing excessive imports. The policy amongst others aimed at driving the process of diversification of the economy, stimulating increased manufacturing output and improving export earnings.

The manufacturing sub-sector was supported by the Economic Stabilization Act intending to contribute immensely to the growth and development of the economy, mainly through enhanced technological advancement, promotion of industrialization and backward integration, the creation of employment opportunities as well as wealth for the Nigerian economy (Sola et al., 2013). These expectations stemmed from the consensual standpoint that manufacturing drives industrialization and catalyzes economic growth.

Although, at first, the outcome of the implementation of the policy showed modest impact on the Nigeria economy as indicated by steady growth in Gross Domestic Product (GDP), but the growth of manufacturing sub-sector, encountered significant decline in growth from 20.5% in 1985 to 0.72% in 1997(CBN, 2004). MAN (2009) equally reported that although the value of manufactured exports increased from N3.9million in 1986 to N730.8million in 1990 and further to N1.096 billion in 1992, manufacturing performance declined significantly during the period largely due to multifarious challenges which include the unfriendly business environment; inconsistent investment policies; overly concentration on crude oil and the inability of the Government to extract optimum benefits from international trade agreements.

According to the report of the National Bureau of Statistics (NBS, 2017) for year 2016, the manufacturing sub-sector in real terms contracted by 4.27% compared to a decline of1.35% recorded in 2015. This was as a result of the fact that in addition to the multifarous challenges of manufacturing, the sub-sector witnessed higher costs of imported inputs due to upswing in exchange rate worsened by higher energy costs occassioned by inadequate electricity supply and more expensive fuel.

Based on the observations, fundamental questions remain as to what is the implication of trade liberalization on the manufacturing sub-sector in Nigeria? Does trade liberalization affect manufacturing sub-groups like Food, Beverage & Tobacco; Cement; Basic Metal, Iron and Steel; Chemical & Pharmaceutical products; Electrical & Electronics; Plastic & Rubber Products and Apparel & Footwear groups in Nigeria? These questions and many more are answered in this study.

Aside from this introduction, the rest of the paper is structured into four sections. Section 2 covers the review of the literature; Section 3 centers on materials and methods while Section 4 focusses on the results and discussions. After that, the conclusion and recommendations in section 5.

II. REVIED OF RELATED LITERATURE

There are a plethora of definitions on the subject-matter of trade liberalization based on the opinions, environment, exposure, and experience of numerous scholars. Historically, the concept of free trade (or trade liberalization) can be traced to the l8th Century in Britain. During this period, free trade or liberalization eventually came to mean the desire for a moderate tariff policy in international trade especially regarding economic transactions with France. Adam Smith's "Wealth of Nations" published in 1776 provided the intellectual pillars for trade. Smith considers free trade as the best policy for economic development arguing that it is better for the economy to be propelled by an "invisible hand," i.e., the forces of interaction between demand and supply motivated by individual self-interest. Later, the work of David Ricardo developed the principle of comparative advantage as an improvement on the works of Adam Smith.

Adeleke, Olowe, and Fasesin (2014) described Liberalization as a process of removing artificial restrictions on production, exchange or use of goods, services, and factors of production. Trade liberalization is commonly described as the removal of all barriers to free trade (import controls and other quantitative restrictions as well as unification and a general reduction in the structure of tariffs), hence the

opening up of the economy. Asongo et al. (2013) opined that the central objective of trade liberalization and industrialization policies is to diversify the export base of a country and strengthen trade with other countries. Trade liberalization measures naturally aim at stimulating production, promoting efficiency, reducing the cost of production and maximizing the welfare of consumers.

Krueger (1978) maintained that the term trade liberalization is the process of moving away from the use of quota restrictions to a possible disequilibrium exchange rate. It involves more significant reliance on market forces for channeling investment into productive activities implying that it is the process of removing all forms of government interference to allow for the free flow of International trade stimulated by the forces of interaction between demand and supply. Iyoha and Oriakhi (2003), viewed the role of the Government as limited to the provision of infrastructure facilities alongside other incentives to encourage the inflow of foreign capital to the Nigerian manufacturing sector. Corroborating this position, Akindele (2001) argued that the removal of barriers to international trade by countries in accordance with multilateral trading system was also major impetus for the acceleration of globalization of trade, a move that was adopted to reduce the impact of balance of payments crisis that resulted from oil glut in the World market in the early 1980s.

Some research works have examined the relationship between trade liberalization and economic growth in different climes. Some these scholars include Yi and Li (2014), Santos- Brieuc (2008), Athanasios (1998), Hamori and Razafimahefa (2003), Summers (1997), Richardson and Tamarauntari (2014), Callistus, Chibueze and Paul (2016), Asongo et al (2013), Ebenyi et al (2017) and David (2013) and more.The outcome of these studies has shown diverse results. For instance, Yi and Li (2014) in their research on the impact of trade liberalization on trade balance of developing countries found that liberalization worsens the trade balance, but the evidence is not robust across different estimation specifications on downstream industries via input linkages.

Brieuc (2008) analyzed the evolution of Chile's trade between 1990 and 2007, particularly the impact of trade liberalization in addition to traditional price and demand determinants and found that export and import flows are principally responsive to external and domestic demand, and less sensitive to relative prices. Summers (1997) analyzed the relationship between external trade and growth in Australia and Canada and concluded that imports and exports play different roles in the economic growth of Canada and Australia. While import played a significant role in Canada, no evidence was found to support the export-led growth in Australia. Afonso (2001) also submitted that trade openness spurs growth through exchange of technology and improvement in trade flow. Strydom (2003) however posited that the impact of international trade on economic growth has always not been encouraging in South Africa.

Hamori and Razafimahefa (2003) applied a time series analysis to four African countries and emphasized that the size of the economy and the extent to which trade is essential to the sustainability of the country significantly determine the effects of trade on growth. Adenikinju and Chete (1995) submitted that import liberalization had a negative impact on total factor productivity growth of the Nigerian Manufacturing sector, majorly because manufacturers are unable to compete with better quality and imported products.

Richardson and Tamarauntari (2014) examined the impact of trade liberalization on macroeconomic performance in Nigeria and found that economic liberalization has a significant impact on the performance of the Nigerian manufacturing, mining and quarrying, and power subsectors as well as the aggregate industrial sector. Callistus, Chibueze, and Paul (2016) similarly examined the role of trade liberalization in the growth of manufacturing output in Nigeria and established that trade liberalization hurts manufacturing output in the short run although it showed real potential to boost it in the long term.

Asongo *et al*. (2013) an inverse relationship exists between trade liberalization and manufacturing sector performance and in that light the study recommended that the manufacturing sector should be protected through tariffs and other protectionist policies that will promote growth and stability in the real sector of the economy until full maturity before it can be opened up for trade. Similarly, Ebenyi et al. (2017) revealed that the Nigerian manufacturing sector relies heavily on imported machinery and equipment, a reflection of the weak technological base of the country and a pointer to the necessity of openness to trade. David (2013) found a positive and significant correlation between trade liberalization and industrial growth in Nigeria and also that structural deregulation had a positive impact on industrial growth in Nigeria.

A cursory look at the content of the literature reviewed so far suggests that most of the works on Nigeria examined the implication of trade liberalization on the manufacturing sub-sector as a whole without any specific extension to the sub-sectoral groups. The need to investigate the impact onsub-sectoral groups especially in the disaggregated pattern. It is the attempt to fill this gap that necessitated the present study.

III. MATERIALS AND METHOD

A. ANALYTICAL FRAMEWORK

The analytical framework for this paper emanates from the neo-classical version of Cobb- Douglass growth model expressed as:

$$Y_t = A_t K_t^{\alpha} L^{1-\alpha} \quad (1)$$

Where Y is manufacturing sub-sector output at a time, 't,' K is capital stock at a time, 't,' L is labor force at a time, 't,' and A is technological progress. We extend this production function

by assuming that technological progress can be influenced by trade openness. This position is canvased inAbdullah (2012) while examining the relationship between trade liberalization and economic growth in Bangladesh using the model specified in equation (2) as:

$$Y_t = h(F_t)+\varepsilon_t \qquad (2)$$

Where Y=Real Gross Domestic Product (a proxy for Economic Growth); F=Trade Openness (Proxy for Trade Liberalization; and ε =white noise error term. However, in the current study, the model is augmented as follows:

$$Y_{it} = \beta_0 FDI^{\beta 1}{}_t L^{\beta 2}{}_t OP^{\beta 3}{}_t EXCH^{\beta 4}{}_t \varepsilon_{it} \qquad (3)$$

Where: Y_i= *The* OutputIndex of Selected Manufacturing sectoral groups (sub-sectors)
L=Labour Force
FDI= Foreign Direct Investment into the manufacturing sub-sector
TO=Trade Openness
EXCH=Exchange rate (EXCH),
ε =white noise error term

It is noteworthy to state that Yi represents the Output index of the individual manufacturing sectoral groups in each of the models. Sources of the time series datafor the period 1986 to 2016 include the Central Bank of Nigeria, National Bureau of Statistics and the World Bankreport.

B.EXPLANATION OF VARIABLES IN THE MODEL

i) OutputIndex (Y_i): The$Y_i$serves as the dependent variable in each of the selected manufacturing sectoral groups. The manufacturing sectoral groups consider in this paper were Food, Beverage and Tobacco Sub-sector (FBT), Cement Sub-sector and the Basic Metal Sub-sector. The choice of these three sub-sectors follows the report of MAN (2017).The NBS (2016)defines the $Y_i$as a measure of improvement in performance or otherwise of these groups.

ii) Labour force (L):Labour is one of the factors of production. Here, it is used as the percentage growth in the Labour Force. All things being, an increase in the labor force if properly harnessed will enhance the output of either of the manufacturing sub-sectors.

iii) Foreign Direct Investment inflow into manufacturing sector (FDI): As noted by Oaikhenan and Aigheyisi (2015), theoretically, the inflow of FDI into an economy compliments domestic investment therein leading to an increasein the rateof capital formation. Thus, this paper posits that an increase in FDI inflow will ultimately trigger the output of the manufacturing sub-sectors in Nigeria.

iv) Trade Openness (OP): This is the primary proxy for trade liberalization in this paper. It is expressed as total trade divided by GDP. It means the sum of exports plus imports divided by GDP. Thus, theoretically, this paper expects a positive relationship between the manufacturing sub-sectors and trade openness.

v) Foreign exchange Rate (EXCH):The EXCH refers to the rate by which one currency can be exchanged for another. In this paper, an appreciation of the Nigeria naira is expected to induce higher output in the selected manufacturing sub-sector in Nigeria. It is measured in terms of US dollars to Naira while taking into cognizance the premium between the official and parallel rates.

C. TECHNIQUE OF ANALYSIS

The technique of analysis employed in the study is the Dynamic Ordinary Least Square (DOLS) proposed by Stock and Watson (1992) cited by Oaikhenan and Aigheyisi (2015). According to Oaikhenan and Aigheyisi (2015), The DOLS method improves the Ordinary Least Square (OLS) by coping with a small sample and dynamic sources of bias. The period 1986 to 2017 is slightly crossed the threshold of minimum number of observation in times series analysis and as such, the choice of DOLS in this paper. Thus, the co-integrating model is represented as follows:

$$\Delta \mathbf{X_t} = \prod + \sum_{P-1} \Gamma_j \Delta \mathbf{X_{t-i}} + \boldsymbol{\varepsilon_t}$$

Where: Π and Γ = ($n \times n$) matrices of unknown parameters and is independent identically distributed white noise errors, zero mean and non-singular covariance matrix. Γ = the vector of autoregressive coefficients; Π = the error correction constant parameters; εt = the vector error term; and Xt = vector of endogenous

IV. RESULTS AND DISCUSSION

A. DESCRIPTIVE ANALYSIS OF VARIABLES

This was done for all the variables engaged and all the selected manufacturing sub-sectoral groups-FBT, CEM, and BM. Table 1 shows the result of the descriptive statistics.

Table 1: Descriptive Statistics Results

	FBT	CEM	BM	FDI	OP	EXCH	L
Mean	1453.675	223.8586	43.23056	62863.55	0.144644	77.05021	2.490944
Median	1071.550	222.6000	20.73000	11084.13	0.093591	58.38500	2.495000
Maximum	3104.000	596.1700	169.4000	329719.0	0.435704	253.6300	2.830000
Minimum	697.6300	49.85000	13.50000	-31.71000	0.000978	0.610000	2.330000
Std. Dev.	722.3297	125.8736	47.77336	97394.87	0.145282	72.39572	0.104187
Skewness	1.087395	1.312754	1.867744	1.474056	0.559988	0.420647	0.784411
Kurtosis	2.739171	4.856420	4.854069	3.777557	1.812541	1.972664	4.569210
Jarque-Bera	7.196614	15.50938	26.08716	13.94394	3.996608	2.644794	7.385433
Probability	0.027370	0.000429	0.000002	0.000938	0.135565	0.266496	0.024904
Sum	52332.29	8058.910	1556.300	2263088.	5.207197	2773.808	89.67400
Sum Sq. Dev.	18261608	554546.0	79880.28	3.32E+11	0.738745	183439.9	0.379924
Observations	36	36	36	36	36	36	36

Source: *Authors Computation (2018)*

Table 1 shows that the computed mean values dispersed from each other in terms of sizes. Again, the calculated standard deviation value for FBT stood at 722.33 was the most volatile variable in the series while L (0.103187) was the least volatile figure. The skewness statistic value calculated reveals that all the variables were positively skewed. Furthermore, the Jarque-Bera statistic values calculated suggest the rejection of the null hypothesis of normal distribution for all the variable except Op and EXCH at 5 percent level of significance but do not reject for others. The implication of these result is that there exists unit root in the series, which necessitates testing Stationarity in the series.

B. UNIT ROOT TEST ANALYSIS

The Unit Root estimate based on the Augmented Dickey-Fuller (ADF) criterion was engaged in testing the time series data engaged for the stationarity properties. It was estimated using the general Unit Root equation of the form:

$$y_t = D_t + z_t + \varepsilon_t \qquad (2)$$

Where: Y_t is the time series, D_t is the deterministic component (trend, seasonal,); z_t is the stochastic component, and ε_t is the fixed error term. Table 2 documents the result of the ADF unit root test result.

Table 2: Unit Root Test Results

Augmented Dickey-Fuller (ADF) Test				
Variables	Level	1st Difference	Status	Remarks
LOG(FBT)	-0.140083	-3.304843	I(1)	Stationary
LOG(CEM)	-0.206879	-5.105972	I(1)	Stationary
LOG(BM)	2.191562	-3.680556	I(1)	Stationary
FDI	1.762372	-7.897622	I(1)	Stationary
LOG(OP)	-0.349815	-6.210184	I(1)	Stationary
LOG(EXCH)	1.307588	-3.839872	I(1)	Stationary
LOG(L)	-1.776390	-9.313564	I(1)	Stationary

Critical Values	Level	1st Difference
1%	-3.632900	-3.639407
5%	-2.948404	-2.951125

		-2.6128	
10%	74	-2.614300	

Source:*Authors' Computation (2018)*

The unit root test on all variables was carried out using the Augmented Dickey-Fuller (ADF) test. A close look at Table 2shows that (the variables) were all stationary at their first differences, which necessitates testing for co-integration.

C.DESCRIPTIVE ANALYSIS OF VARIABLES

The Johansson Co-integration criterion was employed in determining the Co-integration status of the variables. More specifically, the equation of the Trace Statistic, which provided the decision rule in the analysis is as:

$$LR_{tr}=(r/n) = -T\sum_{I=r+1}^{n} Log\ (1-\lambda_i) \quad (3)$$

Where: T=Sample size; n=number of variables; and r=0, 1, 2… n-1

The results of the co-integration using Johansen procedures for the three models are presented in Tables 3a, 3b, and 3c.

Table 3a: Co-integration Result for Food, Beverage and Tabaco Sectoral Group Model

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.743006	95.85434	88.80380	0.0141
At most 1	0.466637	49.65845	63.87610	0.4291
At most 2	0.340461	28.28765	42.91525	0.6048
At most 3	0.203317	14.13638	25.87211	0.6464
At most 4	0.171781	6.408233	12.51798	0.4103

Trace test indicates one cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.743006	46.19590	38.33101	0.0052
At most 1	0.466637	21.37080	32.11832	0.5428
At most 2	0.340461	14.15127	25.82321	0.7095
At most 3	0.203317	7.728144	19.38704	0.8451
At most 4	0.171781	6.408233	12.51798	0.4103

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source:*Authors' Computation (2018)*

Table 3b: Co-integration Result for Cement Sectoral Group Model

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.638506	94.20456	88.80380	0.0192
At most 1	0.557608	59.60923	63.87610	0.1085
At most 2	0.357029	31.88020	42.91525	0.3949
At most 3	0.290834	16.86393	25.87211	0.4252
At most 4	0.141297	5.179298	12.51798	0.5708

Trace test indicates one cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.638506	34.59533	38.33101	0.1264
At most 1	0.557608	27.72903	32.11832	0.1566
At most 2	0.357029	15.01627	25.82321	0.6330
At most 3	0.290834	11.68464	19.38704	0.4451
At most 4	0.141297	5.179298	12.51798	0.5708

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source:*Authors' Computation (2018)*

Table 3c: Co-integration Result for Basic Metals Sectoral Group Model

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.791748	106.9671	69.81889	0.0000
At most 1 *	0.615236	53.62088	47.85613	0.0130
At most 2	0.287303	21.14660	29.79707	0.3486
At most 3	0.205456	9.630846	15.49471	0.3102
At most 4	0.051879	1.811303	3.841466	0.1784

Trace test indicates two cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.791748	53.34618	33.87687	0.0001
At most 1 *	0.615236	32.47428	27.58434	0.0108
At most 2	0.287303	11.51575	21.13162	0.5958
At most 3	0.205456	7.819543	14.26460	0.3973
At most 4	0.051879	1.811303	3.841466	0.1784

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source:*Authors' Computation (2018)*

Tables 3a, 3b, and 3c indicate the results of the Co-integration analysis for each of the selected manufacturing sectoral groups-*Food, Beverage & Tobacco (FBT), Cement (CEM) and Basic Metal, Iron and Steel (BM).* A close at the figures using the Trace Statistics indicates 1 co-integrating equation for FBT and CEM while that of BM was 2at the 5 percent level of significance.The results equally suggest that the outputs of these manufacturing sectoral groups are co-integrated with the independent variables. This implies that a long run relationship exists between these manufacturing sub-sectoral groups and the regressors.

D. ANALYSIS OF THE ESTIMATED MODEL

The results of the specified models based on the DOLS approach are contained in Tables 4a, 4b, and 4c.

Table 4a: DOLS Estimation Result for Food, Beverage and Tabaco Sectoral Group Model

Dependent Variable: LOG(FBT)
Method: Dynamic Least Squares (DOLS)

Sample (adjusted): 1983 2015
Included observations: 33 after adjustments
Cointegrating equation deterministics: C
Fixed leads and lags specification (lead=1, lag=1)
Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	2.09E-06	5.51E-07	3.800595	0.0016
LOG(OP)	0.103219	0.064305	1.605138	0.1280
LOG(EXCH)	0.033132	0.060535	0.547331	0.5917
LOG(L)	4.214175	1.019550	4.133366	0.0008
C	3.410913	0.772078	4.417835	0.0004

R-squared	0.985965	Mean dependent var	7.170972
Adjusted R-squared	0.971930	S.D. dependent var	0.437279
S.E. of regression	0.073262	Sum squared resid	0.085878
Long-run variance	0.007836		

Source:*Authors' Computation (2018)*

Table 4b: DOLS Estimation Result for Cement Sectoral Group Model

Dependent Variable: LOG(CEM)
Method: Dynamic Least Squares (DOLS)

Sample (adjusted): 1983 2015
Included observations: 33 after adjustments
Cointegrating equation deterministics: C
Fixed leads and lags specification (lead=1, lag=1)
Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	9.26E-06	2.27E-06	4.085700	0.0009
LOG(OP)	-0.419619	0.264612	-1.585786	0.1324
LOG(EXCH)	0.286635	0.249097	1.150696	0.2668
LOG(L)	-4.544425	4.195397	-1.083193	0.2948
C	6.371911	3.177061	2.005599	0.0621

R-squared	0.683420	Mean dependent var	5.226704
Adjusted R-squared	0.366841	S.D. dependent var	0.557270
S.E. of regression	0.443427	Sum squared resid	3.146036
Long-run variance	0.132688		

Source:*Authors' Computation (2018)*

Table 4c: DOLS Estimation Result for Basic Metals Sectoral Group Model
Dependent Variable: LOG(BM)
Method: Dynamic Least Squares (DOLS)

Sample (adjusted): 1983 2015
Included observations: 33 after adjustments
Cointegrating equation deterministics: C
Fixed leads and lags specification (lead=1, lag=1)
Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	8.08E-06	8.43E-07	9.586514	0.0000
LOG(OP)	0.009312	0.098396	0.094634	0.9258
LOG(EXCH)	0.063722	0.092626	0.687950	0.5013
LOG(L)	1.515655	1.560053	0.971541	0.3457
C	1.426709	1.181386	1.207657	0.2447
R-squared	0.980531	Mean dependent var		3.367003
Adjusted R-squared	0.961063	S.D. dependent var		0.730684
S.E. of regression	0.144182	Sum squared resid		0.332615
Long-run variance	0.018347			

Source:*Authors' Computation (2018)*

Table 4a shows the coefficient of Trade Openness (OP) is 0.103 and positive, implying that one percent increase in OP will increase the output of the FBT by about 0.103 percent thereby aligning with apriori theoretical supposition that trade openness is capable of enhancing output, productivity gains, technology transfers and more in FBT manufacturing sub-sector.However,Tables 4a, 4b and 4c also reveal that trade liberalization does not impact on FBT significantly at the 5 percent level.

The policy implication of this finding is that OP had not affected the fortunes of the FBT in Nigeria. These findings corroborate the findings of Adenikinju and Chete (1995), Asongo *et al*. (2013), Yi and Li (2014) and more. More specifically, Adenikinju and Chete (1995) opine that import liberalization has had a negative impact on total factor productivity growth of the Nigerian Manufacturing sector, majorly because manufacturers are unable to compete with better quality and imported products. This observation, in the view of this paper, calls for concern by policymakers.

One other lesson from Tables 4a, 4b, and 4c is that FDI is positively signed and impacts on FBT, CEM, and BM. The policy implication of this result is that the FBT, CEM, and BM rely chiefly on Foreign Direct Investment inflow. Meaning, the attainment of an inclusive economic growth is guaranteed when FDI driven policy initiatives are instituted and effectively implemented; and the inflow into FBT, CEM and BM is sustained (Adofu 2009). Perhaps FDI inflow had helped the FBT, CEM and BM in-terms of the introduction of innovative ideas, managerial skills and technical know-how, employee training and more. Table 4aequally shows that the coefficients of the labour force (L) positively impacts on FBT model. Tables 4b and 4c indicate that L does not significantly affect CEM and BM models at 5 percent level of significance. This observation seems to suggest that more people are employed in the FBT sub-sector than CEM and BM sub-sectors obviously because the operations of the later is driven by higher technology and by default more capital intensive.

V. CONCLUSION AND POLICY RECOMMENDATION

Global evidence has shown that no nation can be an island and that trade liberalization as a universal order has come to stay. The issue, therefore, should not be how to limit Liberalization in the country but on how to take advantage of this global order. The study concludesthat trade liberalization does not significantly impact FBT in Nigeria. Perhaps other factors that hamper the competitiveness of the group make it difficult for its products to command heavy market share in international trade.

The paper, therefore, recommends that in order to enhance the performance of these sectoral groups and the manufacturing sub-sector,the government should urgently improvethe state of infrastructure in the country; enhance competitiveness; promote improved utilization of raw materials available locally; review extant trade agreements and align them with National Economic Aspirations; and generally, synchronize Nigerian Foreign Trade Policies with Industrial Policies to facilitate beneficial trade. This will preventavoidable influx of cheap and inferior foreign products that could negatively affect the domestic manufacturing sub-sectors. Again, there is a need to sustain foreign policies thatwould attract more FDI inflow into the Nigerian economy, particularly the manufacturing sub-sector.

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