Trade Openness and Manufacturing Sector Growth: An Empirical Analysis for Nigeria

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Abstract *This study examines the impact of trade openness on manufacturing sector performance in the Nigerian economy, using a time series data from 1975 to 2010. The effects of stochastic shocks of each of the endogenous variables are explored using Error Correction Model (ECM). The analysis shows that trade openness has a positive impact on the manufacturing sector performance while exchange rate, inflation rate have a negative impact on the sector performance. The error correction coefficient also indicates rate of adjustment for disequilibrium of the variables shows that growth in the manufacturing sector adjust slowly in the economy. The development of Manufacturing sector and its effective promotion have not been approached seriously in Nigeria, hence, the lack of their impact in the economy. This could be attributed to a plethora of factors, including a weak technological base and low level of capacity utilization. Another major finding from this study is that there are significant pay-offs from the policy of trade liberalization. This study therefore recommends that government should avoid short-term fixes and front-loaded deals with other countries and move beyond arrangements that focus solely on the petroleum sector. Also to promote the imports of capital goods, there the need for transparent oversight largely monitored by regulatory institutions.*

KeyWords: *Trade openness, Manufacturing Sector, Economic Growth, Cointegration*

1. Introduction

Trade of a country is a key determinant for the improvement of a country's industrialisation. Moreover development experienced by a country brings some changes in trade structure on the basis of endowments and comparative advantage (Hulton, 1967). Trade is considered an integral part of Nigeria's economic activity and, among Nigerians at least, it is widely perceived that Nigeria is a very open economy. The economic condition of Nigeria has advanced over the years as a result of the rapid pace of industrialization. The economy of Nigeria has also improved tremendously with foreign investment aided by high quality research and development. Nigeria was under the British colonial rule for a considerable period of time. After independence, efforts were made to enhance the economic growth of the country through a set of reforms. One of these reforms is liberalizing trade for the purpose of improving growth of the country. However, debates over the relationship between trade openness and growth have been going on for years. A key aspect

of that debate is how important growth is for poor countries as they strive to catch up with the best-of-the best in a competitive world.

Due to the establishment of multilateral ties with other countries, the trade scenario of Nigeria has received a great impetus over the last decades. An overview of the economy of Nigeria remains incomplete without mentioning its growing foreign investment which has left behind a positive effect on its trade and commercial business. There have been defective infrastructural facilities which have hampered the constant growth of the country yet efforts are made to revive those sick industries of the country through foreign collaboration and investments. The relationship between trade openness and manufacturing productivity growth is a highly debated topic in the growth and development literature, yet this issue is far from being resolved. The existing empirical literature does not provide clear evidence on relationship between trade openness and manufacturing productivity growth. Many studies provide evidence that increasing openness has a positive effect on manufacturing output growth. On the other hand some studies report that it is difficult to find robust positive relationships or even that there is negative relationship between openness and manufacturing output growth.[1]

Several studies on trade openness both theoretical and empirical have based their studies on trade openness and economic growth, examples of the studies include, Harrison (1996), Edward (1998), Ynikkaya (2003), wacziang (2001), Sinha. and Sinha (2000), Njikam (2009) and Adebiyi (2006) among others. Past studies of trade openness on economic growth have found various results, there is however evidence that there is both positive impact and negative impact of trade openness on economic growth.

However, only limited studies explicitly recognize the fact that before there can be economic growth in an economy there are variables that have to be present in addition to be efficient and effective in their sectors before there can be economic growth. The manufacturing sector is a major determinant of economic growth, so the study is therefore a contribution to the role and impact that the performance of the manufacturing sector plays as regards trade openness in an economy.

Foreshadowing our main results, we find evidence that trade openness has a positive impact on the manufacturing sector performance while exchange rate, inflation rate has a negative impact on the sector performance and also the adjustment for disequilibrium of the variables shows that growth in the manufacturing sector adjust slowly in the economy.

The remainder of the paper is organized as follows. Following section one is section two which deals with the literature review. In Section three, the methodology and data of the study is pursued while the empirical results are discussed in section four. Section five concludes the paper.

2. Review of Relevant Literatures

A number of arguments have been discussed in the empirical literature with regard to the impact of trade liberalisation on the output growth of domestic firms in an economy. One can argue that there would be a negative relationship between import penetration and manufacturing sector performance, as foreign competition should restrain the exercise of market power by domestic firms in the domestic market. Katrak (1980) for India, Amjad (1977) for Pakistan, Haddad et. al, (1996) for Morocco, and Foroutan (1996) for Turkey has obtained support for their hypothesis that, in industries faced with significant degrees of actual import competition, the ability of domestic firms to maintain prices above average cost is reduced. Beng and Yen (1977) conducted a study for Malaysia, Weiss (1991) for Mexico and Krishna and Mitra (1997) for India obtained support for their hypothesis that tariffs enable producers to reap high domestic profits. Grether (1996) for Mexico concluded that less protective sectors behaved more competitively. In another study, Semenick and Morrison (2000) reduction in protectionism could be accompanied by a decrease in industrial output since increased competition may force producers to exit instead of expanding.

Protectionist laws attract a large number of small, high-cost producers and results in a fragmentation of the home market. Goldar (1986) conducted a study for India showing that Import-substitution policies had a negative impact on total factor productivity; this was tested and supported in the case of Turkish industries (Krueger and Tuncer 1982). Due to foreign exchange constraints and non-substitutability between imports and domestic intermediate and capital inputs, the fixed capacity level may become idle in an economy where import-substitution policy is pursued. In the Chilean economy (Condon, Corbo and de Melo 1984) and Egyptian industry (Handoussa, Nishimizu and Page 1986), this was found to be an important reason for Technical Factor Productivity (TFP, thereafter) growth during trade opening. A study conducted in

[1] Nishimizu and Robinson (1984); Tybout (1992); Mulaga and Weiss (1996); Soo, (2008); Madheswaran et al (2007); Krishna and Mitra, (1997); Kim, (2000), and Goldar and Anita Kumari (2003), found a positive relation between trade openness and manufacturing growth. Goldar (1986); Krueger and Tuncer (1982); Semenick and Morrison (2000) showed a negative relation between aid and growth.

Malawi, Mulaga and Weiss (1996) argue that the slight improvement in TFP as a result of trade reforms between 1987-91 can be explained in terms of higher capacity, as firms previously facing a shortage of foreign exchange were able to stock up on parts and raw materials. The authors did not establish any link between TFP and the fall in protection when they used TFP estimates adjusted for change in capacity utilisation. In this case TFP does not reflect genuine productivity improvement, as a shift from one production frontier to other occurs and does not appear to correlate systematically with exposure to foreign competition.

Nishimizu and Robinson (1984) found a positive link between higher exports and TFP growth of the manufacturing sector arising from competitive cost-reducing incentives and a positive link between export expansion, import liberalization and TFP growth arising from the importance of foreign exchange constraints and non-substitutable imports of intermediate inputs and capital goods. A growth decomposition measure was used in this study to explain productivity growth in a multiple regression framework of four semi-industrialized countries: Japan, South Korea, Turkey and Yugoslavia. At the two-digit ISIC level South Korea's total factor productivity grew more rapidly than those of Turkey and Yugoslavia. South Korea selectively promoted infant industries and these exhibited superior performance by following an outward-looking strategy. In Turkey, the export phase from 1970 to 1973 turned out to be abortive largely because the government allowed incentives to move against exports. Turkey entered into rapid and successful export promotion during 1963-76. If this is true, then it can be argued that Turkey experienced a successful period of import substitution, in which its infant industries reached maturity. This is contradictory to Krueger and Tuncer's (1982) findings that protection did not elicit the growth in productivity. The assumption that there are well-defined production technologies describing all plants within an industry may not be true. Tybout (1992) went beyond this and measured productivity growth at plant level in Chile, Colombia and Morocco. Tybout's model revealed that output expansion not only came from productivity growth, but also that productivity change was accompanied by changes in scale or net entry. Tybout (1992) found that output growth was positively correlated with entry but did not correlate significantly with the exit of firms, and higher effective protection rates were associated with large plant size, especially at the low end of the size distribution.

Based on the aforementioned argument, the hypothesis that trade opening had a positive impact on manufacturing's productivity growth has been tested and obtained some support in some studies which include (Kim, 2000: Dongsuk 1992) for South Korea, (Weiss, 1992: Tybout and Westbrook, 1995) for Mexico, (Rodrigo, 1995) for the Chilean economy, Sri Lanka (Weiss and Jayanthakumaran, 1994), (Urata and Tokota, 1994) for Thailand, in Cote d'Ivoire (Harrison, 1993), Indonesia (Kristiono, 1997: Sjoholm, 1997), and in India (Soo, 2008; Madheswaran et al 2007; Krishna and Mitra, 1997; Goldar and Anita Kumari (2003).

Tybout (2000) and Epifani (2003) survey the possible effects of trade policies on manufacturing firms in developing countries. Among these studies, some try to determine whether internal economies of scale explain correlation between trade liberalization and productivity. Their conclusions suggest that scale efficiency gains are minor and not correlated with trade liberalization (Tybout and Westbrook 1995). Firm-level studies find that it is the re-allocation of resources from less to more productive firms that explains productivity gains (Pavcnik 2002, Tybout 2001, Tybout and Westbrook 1995). Other studies also estimate if there are turnover effects linked to trade policies. Using firm data for Chile 1975-85, Tybout (1996) finds that net exit increased aggregate productivity in Chile. Net exit was in fact the main component of productivity gains for import competing industries. On the contrary, for Morocco net entry led to lower aggregate productivity (Haddad, et al 1996). A third source of aggregate productivity gains associated with trade liberalization policies could come from improvements in intra-firm efficiency. Roberts (1996) finds that productivity growth can be attributed to intra-plant movements, using firm-level data for Colombia for 1977-87. Without exploring why trade liberalization may affect productivity, some studies use firm and industry-level data and find a positive and significant correlation between trade measures and productivity measures (Haddad 1993, Paus et. al. 2003).

Sharma, Jayasuriya and Oczkowski (2000), based on their analysis of Nepalese manufacturing, claim that while trade and exchange rate policy reforms may be a necessary condition for improving productivity growth in "least developed" economies, they are not sufficient conditions. Other factors such as appropriate investment policies, shortages of human capital and physical infrastructure need to be addressed if potential productivity improvements are to be reaped. Jenkins (1995) found very little evidence from the Bolivian case and concluded that trade liberalization is neither a necessary nor sufficient condition for rapid productivity growth. Only the spinning and weaving industries have increased productivity through the elimination of high cost producers and the scrapping of obsolete capacity. Bolivia experienced lack of investment, a high real rate of interest and lack of organizational change during this period. As a result, increased productivity through these factors was insignificant.

Finally, Njikam, Binam and Tachi (2006) assess the factors behind differences, in total factor productivity (TFP) across sub-Sahara Africa (SSA) countries over the period 1965-2000. The cross-section, fixed effects using annual data, fixed-effects using data in 3-year averages as well as the seemingly unrelated regression (SUR) results show that (i) openness to world trade is conducive to TFP in SSA region only if issues related to supply conditions such as poor

transport and communication infrastructure, erratic supply of electric energy. Corruption and bad governance, insufficient education of the labour force etc are adequately addressed, (ii) physical capital accumulation is important for TFP, (iii) the size of the financial sector mattes for TFP, in some SSA countries and negative for TFP in other SSA countries.
In short, the results of research on the relation between openness and manufacturing sector growth vary depending upon the models, data and countries of analysis. Therefore, the debate over the impact of trade openness on manufacturing sector growth is on-going and left open to further study.

3. Methodology and Data

3.1 Model Specification

The theoretical foundation of this work rest on the Heckscher- Ohlin model. The Heckscher-Ohlin model is a general equilibrium mathematical model of international trade. It builds on David Ricardo's theory of comparative advantage by predicting patterns of commerce and production based on the factor endowments of a trading region. The model essentially says that countries will export products that use their abundant and cheap factors of production and import products that use the countries scarce factor. The Heckscher Ohlin model serves as a platform on which the empirical model is formulated as follows.
The empirical part begins with a traditional production function of the Cobb-Douglas type that is assumed to reflect the true production of a given industry.

$$Y = AK^{\beta_1}L^{\beta_2} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

Y is the output level, A is technical efficiency of the sector, L represents number of workers and K represents the stock of capital. Endogenising trade impact into equation one with an assumption that the country is an open economy generates;

$$Y = AK^{\beta_1}L^{\beta_2}T^{\beta_3} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

The production function follows a constant return to scale (CRS) such that β_1+$\beta_2 + \beta_3 = 1$
In logarithms, the true production function can be expressed as:

$$InY = InA + \beta_1 InK + \beta_2 InL + \beta_3 InT \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

We have adopted the model of Sinha and Sinha (2000), which states that the GDP growth has three growth components, namely; trade growth, labour growth and investment growth. The volume of trade (import plus export)/GDP is used as proxy of openness. The following equation is then derived.

$$MYG = \beta_0 + \beta_1 IG + \beta_2 PG + \beta_3 TG + \beta_4 INF + \beta_5 REER + \varepsilon \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

MYG refers to manufacturing output growth; TG is trade growth – proxy for openness; IG is Investment growth; PG is employment growth in the sector; INF is inflation rate; REER is real exchange rate; e is the error term. This research is also concerned with the terms β_0 (=lnA)

3.2 Estimation Technique and methodology

In order to develop strong, robust and reliable models that capture the relationship between trade openness and manufacturing output growth, the research work adopts the econometric techniques of the Error Correction Term (ECT) as the estimation technique. The method of ECT is extensively used in regression analysis primarily because it is initiatively appealing and mathematically much simpler than any other econometric technique (Gujarati, 2003). The error correction term indicates the speed of the adjustment which restores equilibrium in the dynamic model.

$$\Delta MYG_t = \alpha_0 + \sum_{i=1}^{j} \alpha_{1i}\, \Delta MYG_{t-i} + \sum_{i=1}^{j} \alpha_{2i}\, \Delta TG_{t-i} + \sum_{i=1}^{j} \alpha_{3i}\, \Delta IG_{t-i} + \sum_{i=1}^{j} \alpha_{4i}\, \Delta PG_{t-i} + \sum_{i=1}^{j} \alpha_{5i}\, \Delta INF_{t-i}$$
$$+ \sum_{i=1}^{j} \alpha_{6i}\, \Delta REER_{t-i} + \alpha_{7i} ECM_{t-1} + U_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

As this study involves time series data, the ordinary least square (OLS) method cannot be applied unless it is established that the variables concerned are stationary. For this paper, we have applied unit root test to check the stationarity of the variables under study. Specifically, the Augmented Dickey-Fuller (ADF) and Phillip-Perron test (PP) are used; the ADF and PP are used to avoid spurious regression thereby subjecting each of the variables used to unit root test so as to determine their orders of integration since unit root problem is a common feature of most time series data.

3.3 Data Sources

The research study makes use of secondary data. The data used are obtained from the Central Bank of Nigeria (CBN) statistical bulletin 2010 and Penn World Data.

4. Empirical Results

4.1 Descriptive Statistics

The summary of the statistics used in this empirical study is presented in Table 1 below. As observed from the Table, MYG as a has the mean value of 11.21767 and the mean value of (INF) has the highest mean value of 20.55208 whereas the mean values of TG, IG, PG and REER are 11.21767, 11.36799, 11.36799 and 2.344606 respectively. The analysis was also fortified by the values of the skewness and kurtosis of all the variables involved in the models. The skewness is a measure of the symmetry of the histogram while the kurtosis is a measure of the tail shape of the histogram. The bench mark for symmetrical distribution i.e. for the skewness is how close the variable is to zero while the case of the kurtosis is three (mesokurtic) but values lower than that is called platykurtic and above is referred to as leptokurtic.

Table 1. Summary Statistics

	MYG	TG	IG	PG	INF	REER
Mean	11.21767	11.21767	11.36799	2.492094	20.55208	2.344606
Median	11.59682	11.59682	11.32467	2.495455	13.50000	2.968233
Maximum	11.97767	11.97767	14.70862	3.111829	72.80000	5.003275
Minimum	8.917713	8.917713	8.521145	1.610936	5.400000	-0.604404
Std. Dev.	0.963798	0.963798	1.995797	0.379603	16.85481	2.171385
Skewness	-1.597378	-1.597378	0.244273	0.029297	1.489451	-0.161476
Kurtosis	3.902516	3.902516	1.640693	2.404800	4.441715	1.462111
Jarque-Bera	16.53151	16.53151	3.129587	0.536545	16.42860	3.704103
Observations	36	36	36	36	36	36

Source: Computed by the Researchers

4.2 Result of Unit Root Test

In this analysis, the model with constant is considered. The null hypothesis in both the ADF and PP test is that there is the presence of unit root. Table 2 and 3 below report the results of ADF and PP test respectively.

Table 2: Augmented-Dickey Fuller (ADF) Test

Variables	ADF Values	Mackinnon Critical Values	Order of Integration
MYG	-6.422229*	-3.6394	I(1)
TG	-7.2556*	-3.6394	I(1)
IG	-2.9249*	-2.6158	1(0)
PG	-5.1794**	-3.6394	I(1)
INF	-2.9827**	-2.9484	I(0)
REER	-5.6964*	-3.6394	I(1)

Source: Computed by the Researchers

Note: One, two and three asterisk denotes rejection of the null hypothesis at 1%, 5% and10% respectively based on Mackinnon critical values.

The above results i.e. ADF test shows that all the variables are stationary at first difference with the exception of IG and INF. This means not all the variables are integrated of order 1, some are of level while the others are of order one.

Table 3: Phillip-Perron Test (PP)

Variables	PP Values	Mackinnon Critical Values	Order of Integration
MYG	-7.282436*	-3.6329	I(1)
TG	-7.1854*	-3.6394	I(1)
IG	-5.0592*	-3.6329	I(0)
PG	-7.6373**	-36394	I(1)
INF	-3.0478**	-2.9484	I(0)
REER	-5.7085*	-3.6394	I(1)

Source: Computed by the Researchers

Note: One, two and three asterisk denotes rejection of the null hypothesis at 1%, 5% and10% respectively based on Mackinnon critical values

The above results i.e. Phillip-Perron test shows that all the variables are stationary at first difference with the exception of INF and IG. The two tests produce similar results. Therefore, the PP method is adopted for the research work where the results show that all most all the variables are found to be stationary at 99 percent significance level in their first difference from with the assumption of constant. Therefore, all variables are non-stationary and integrated of level order and order 1.

4.3 The Co integration Analysis Results and Interpretation

In determining the number of co integrating vectors, trace test and maximum Eigen value test using the more recent critical values of Mackinon-Haug-Michelis (1999) was applied. The assumption of no deterministic trend and restricted constant was for all the variables. The choice was tested using (AIC) and Schwartz Information Criterion (SIC). The result for both trace test and maximum Eigen value for unrestricted co integration rank test are presented in Table 4

Table 4: Johansen Cointegration Result

Hypothesized No. of CE(s)	Eigen value	Max-Eigen value	Critical value		Trace statistic	Critical value	
			5 percent	1 percent		5 percent	1 percent
None	0.85208	64.9788**	39.37	45.10	136.050**	94.15	103.18
At most 1	0.60727	31.7774*	33.46	38.77	71.0711*	68.52	76.07
At most 2	0.42079	18.5672	27.07	32.24	39.2936	47.21	54.46
At most 3	0.32645	13.4370	20.97	25.52	20.7263	29.68	35.65
At most 4	0.17458	6.52370	14.07	18.63	7.28931	15.41	20.04
At most 5	0.02226	0.76561	3.76	6.65	0.76561	3.76	6.65

Source: Computed by the Researchers
*(**) denotes rejection of the hypothesis at the 5 %(1%) level

From Table 4 above, it is observed that both the Trace test and Max-Eigen statistic indicates two integrating equations at 5% level of significance and one integrating equation at 1% significance level. Based on the evidence above, we can safely reject the null hypothesis (H_0) which says that there is no co integrating vectors and conveniently accept the alternative hypothesis of the presence of co integrating vectors. Thus, we can conclude that a long run relationship exists among the variables. This result means that in Nigeria's case, the hypothesis of no co integration among the variables should be rejected. Therefore there exists a long run relationship among the variables which are –MYG, TG, IG, PG, INF and REER.

4.4 Model Estimation Issues and Discussion of Results

The result of our co integration test reveals that at least one co integrating vectors exist among the variables of interest. This means that we can estimate the Error Correction Model. An Error Correction Model is designed for use with non-stationary series that are known to be co integrated. The ECM has co integration relations built into the specification so

that it restricts the long-run behavior of the endogenous variables to converge to their co integrating relationships while allowing for short-run adjustment dynamics. The use of the methodology of co integration and ECM add more quality, flexibility and versatility to the econometric modeling of dynamic systems and the integration of short-run dynamics with the long-run equilibrium. The Error Correction Models were evaluated using the conventional diagnostic tests and the Schwarz Information Criterion (SIC) was adopted in choosing the appropriate lag length. The model with the lowest (SIC) was adopted. The results are of the co integrating relationship amongst the variables within the ECM framework are presented in Table 5 below.

Table 5: Parsimonious Error Correction Estimate

Dependent Variable: D(ln(MYG))			
Method: Least Squares			
Variable	Coefficient	t-Statistic	Prob.
C	6.8149	3.8716*	0.0037
D(ln(MYG(-2)))	0.3684	1.49679	0.1475
D(TG(-1))	0.0092	0.2373	0.8144
D(ln(IG(-1)))	0.5688	1.7169***	0.0989
D(PG(-2))	-0.2074	-0.5615	0.5796
D(INF(-2))	-0.0023	-0.4845	0.6324
D(ln(REER(-1)))	-0.0648	-0.3070	0.7615
ECM(-1)	-0.3246	-2.0092**	0.0549
R-squared	0.4839		
Adjusted R-squared	0.4281		
Durbin-Watson stat	1.9414		

Source*:* Computed by the Researchers

The analysis on the impact of trade openness on the manufacturing sector is presented in the table above. The result obtained from the dynamic model indicates that the overall coefficient of determination (R^2) shows that 48.39 percent of growth rate of MYG is explained by the variables in the equation. As the adjusted (R^2) tends to purge the influence of the number of included explanatory variables, the (R^2) of 0.4281 shows that having removed the influence of the explanatory variables, the dependent variable is explained in the equation by 42.81 percent. The Durbin Watson (D.W) statistics of 1.94 as it is significantly below the bench mark of 2, we can conclude that there is no auto- correlation or serial correlation in the model specification; hence the assumption of linearity is not violated.

In terms of the signs and magnitude of the coefficients which signify the impact of trade openness on the manufacturing sector, it can be seen that all the variables MYG, TG, INF and REER except IG and PG concur with a'priori theoretical expectation. The significant coefficients of all exogenous variables clearly state that Nigeria's economy manufacturing growth rate depends on growth of investment, population and foreign exchange in the long run. Above all trade openness has a positive impact on growth of MYG, though small but still significant. From the table a unit change in trade openness brings about 0.9% increase in growth of MYG thereby suggesting that there are other relevant variables apart from trade openness that can lead to manufacturing sector development Also exchange rate has a negative impact on growth of MYG and this is because there has not been a stable policy in exchange rate by the CBN. The variable exchange rate is important but it does not significantly affect the growth of MYG positively. A unit change in REER brings about 6% decrease in the growth of MYG. Also inflation has a negative impact on MYG. A unit change in INF brings about a 0.19% change in growth of MYG. In terms of t-statistics, all variables are not statistically significant with the exception of IG which is significant at 10%.

The estimated coefficient for the error correction term reveals which of the variables adjust to correct imbalance in the growth situation whilst the variable coefficients show the short-run effects of the changes in the explanatory variables on the dependent variable. The results confirm that growth of manufacturing output in Nigeria has an automatic mechanism and that MYG in Nigeria responds to deviations from equilibrium in a balancing manner. A value of (-0.324) for the ECM coefficients suggests that a fast speed of adjustment strategy of 32%. The results of this paper authenticate the findings of Tybout (2000), Epifani (2003), Soo, (2008) and Madheswaran et al (2007) that trade liberalization has a substantially greater impact on manufacturing sector performance.

5. Concluding Remark

The study has been preoccupied with the impact of trade liberalization on the manufacturing sector of the Nigerian economy. The development of Manufacturing sector and its effective promotion have not been approached seriously in Nigeria; hence, the lack of serious impact in the economy. Important findings were discovered during the course of this research, one is the relatively low productivity in the Nigerian manufacturing sector. This could be attributed to a plethora of factors, including a weak technological base and low level of capacity utilization. Also another major finding from this study is that there are significant pay-offs from the policy of trade liberalization. The current policy of trade liberalization, which emphasizes lower tariffs and increasing openness of the economy, was found to be growth enhancing.

The manufacturing sector is a very important sector in the economy requiring efficient and effective management to increase the level of growth and development. It is therefore, important to consider conditions that would ensure sustained growth in this sector. So the following recommendations are discovered from the cause of the study, they include;

i. Policies must be introduced to promote the imports of capital goods, in addition new and advanced technologies must be promoted in enhancing the growth of industrial value added which in turn contributed to positive economic growth.
ii. The Nigerian government should avoid short-term fixes and front-loaded deals with other countries and move beyond arrangements that focus solely on the petroleum sector. High commodity prices are only a temporary vehicle that can be utilized to drive Nigeria's economy into a more economically diversified state, the true mechanism for sustained growth.
iii. Nigerians should be pragmatic as they strive to "build institutions." Past attempts to build institutions in Nigeria particular and other African countries have shown that just uprooting and transplanting institutions does not work. The process is evolutionary in nature and dependent on political will and strong leadership to make the necessary changes.

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