In Examining the Impact of Trade and Industrial Policies on Manufacturing Sector in Nigeria (1980-2020): Do African Continental Free Trade Matters?

Lawal Wasiu Omotayo & Odetokun Blessing Odeleke
Department of Economics and Development studies Federal University Dutsin-ma, Katsina State, Nigeria
E-mail Address: suki4wisdom@yahoo.com. Phone number: 07063011021

Abstract

The Nigerian Manufacturing sector has been underplayed, despite trade and industrial policies put in place, it is possible that the African continual free trade could be a springboard to enhance the subsector. This paper uses the Structural Autoregressive model to examine the impact of trade and industrial policies on manufacturing sector in Nigeria between the periods of 1980-2020, and the possible role of African continental free trade. Data were drawn from secondary source. The variables used in this study include, exchange rate, tariffs, capital, labour and trade openness; while manufacturing output (MO) is used to proxy the performance of manufacturing sector. After accounting for structural breaks in the series and ensuring the stationarity properties of the series. From the short run result, the current and past lagged tariff are not in line with theories, a 1% increase in tariff will leads to a proportionate increase in manufacturing subsector by 0.88% and 0.19% concurrently. The result further revealed that past exchange rate has an insignificant effect on manufacturing productivity, implying that a 1% rise in current and past exchange rate leads to a fall in manufacturing output by 0.04 % and 0.05 %, concurrently. The result of the variance decomposition shows that Shocks to tariff accounted for the second most significant variations in manufacturing productivity, with progressive increase noticeable over time. The impact rose from 18.0 % in the first year to as high as 62% in the tenth year. The result of impulse response function revealed that manufacturing productivity responding to its own shocks, tariff, exchange rate and capital are positive. The expansionary effect of exchange rate and tariff devaluation on manufacturing productivity was established in Nigeria. The findings are suggestive of African continental free trade is strong precursor to drive trade and industrial policies in Nigeria and enhance manufacturing output.

Keywords: industrial policy trade openness, trade policy and structural autoregressive model
JEL Classification Codes: F 14, 014, 033

1. Introduction

The concept of industrial policy was extensively viewed in trade literature. However, what is clear from the literature is that the concept refers to a process the government involved, through specifically stipulated policies in industrial affairs, burning out of inadequacy of policies availability in controlling the industrial growth of the economy, with a view to enhancing the competitiveness of domestic

industries, stimulating local value-added and promoting industrial growth and development (Dunning, 1998; Obadina, 1998; Madungu, 1999). Broadly speaking, trade policy refers to breaking down of controls over import, rationalization and general lowering of import tariff; this is the crux of economic reform programs introduced (World Bank, 1994). The Trade policy of a country has the potential of undermining the growth process of an economy in the literature; several avenues have been identified through which trade policy can enhance growth in industrial sector. This includes low cheaper technology, economies of scale e.g., an organization that usually operates in an open economy have linkages with advanced technology, put in place most viable production techniques and enhance output, in essence, trade policy enhances competition among similar organization and markets for their export (Osada, 2018)). In the literature, study like Chete, Adeoti, Adeyinka and Ogundele (2017) have examined the effect of trade liberalization on growth in developing countries, but many basic issues remain unresolved, it needs to be stated that one of the main precision strengthening the free trade agreement is that, it will lead to greater efficiency gains among member countries, due partly to its members growth is one of the core objective of the trade agreement. Policy predictability and certainty that will enhance trade responses from international competitiveness is core, but the fundamental question is that has this really happened among member's countries, this is an empirical question this paper seeks to address.

Increasing attention is being recognized and poised a serious threat to industrial output and economic disintegration in most developing countries like Nigeria (Stigliz, 1998: IMF, 2002: Streeten, 2003). While the thought of industrial and trade policies have grown synonymously, the effect of trade policy on manufacturing output and productivity has attracted policy concern, especially among the development economists, some arguing that recent trade policy betrays the infant industry and favor technology against local content development World Bank (2019). This contention grew in Nigeria with the evident of declining output, when compared Nigeria's growth performance with those countries at the frontier, such as the United States, China among others. Using a more developed economy, like united states, Adenikinju (2005) discovered that Nigeria production capacity when compared to developed nations has reduced, as statistical evidence shows that developing countries has been insignificant as previous capacity dropped by 4.58% from 1999 to 2000, while the developed countries like the United States from 1971 to 3.1 % in the year 2000. The disparity in production shortfall between the two

countries indicates the absence of convergence and threat of trade policy among others.

Although, industrial policy is at the forefront of Nigeria's numerous economic policies, the performance of manufacturing sector remains an abysmal against its potential and in global comparative impact analysis. The impact of the early development planning cum industrialization strategies was reported with mixed reaction. Arguably, the initial import substitution industrialization (ISI) spurred the development of the capital goods subsector, but the backlash effect led to import-dependent industrial structures responding negatively to economic downturns, while declining capacity utilization as argued by Chete *et al*. (2014), the continuous protection of the sector in the import substitution period in line with anticompetitive policies in the form of low interest rate led to the sectors difficulty to evolve a persistent rate of growth in a manner that it will competes with the rate of industrialization of vibrant counterpart (Adenikinju, 2005).

It is not in contention that trade and industrial policies has been severally discussed by researchers in the field of economics in most developing countries, several literatures have supported the argument that trade and industrial policies are the engine room for manufacturing sectors, among them are Edwards (1992), Weinhold and Rauch (1999); Dutta and Ahmed (2001); Salehezadeh and Henneberry (2002); Dawson, (2006). The increasing development recorded in the Nigerian economy over the years are not necessarily accompanied by a sustainable trade and industrial policies, as high contentious manufacturing sector and poor productive output still remain pervasive, all of which are inconsistent with the prediction of theory (Nwankwo, 1986; Obadan, 2004). It is therefore apposite to investigate the possible role of African continental free trade proxied by trade openness, as this may be the likely missing link in Nigeria's productive output and the revitalization of infant industries, the implication of which is that the failure to realize productive output and export driven levels, might be because of the quality of the country's trade openness in relation with other developing nations (Umoh & Effiong, 2013). Many empirical analyses have tended towards examining the effect of industrial policy on level of the economy without accounting simultaneously for the impact of trade openness (e.g. Osada, 1997; Hwang, 1998, Teubal, 2007). An analysis that combines the role of trade openness with that of trade policy in Nigeria may be helpful in shedding light on the exact nature of the former in the analyzing of manufacturing output trajectory.

Despite the policy efforts over the last decades to enhance industrialization in Nigeria, oil and gas has continue to be the mainstay. This to a large extent has affected the country's desire to industrialize immediately (Briggs, 2007). The Nigeria economic structure is typical gasping for survival, the agricultural primary sector has been accounting for significant part of the GDP. The manufacturing sector continues to be the mover of the economy, producing 95 % of foreign direct gain and about 85 % of revenue accrued to the government between 1969 and 2019, Similarly, the industrial sector also produce an average smaller proportion of economic activities of about 7%, while the manufacturing subsector accounted barely an average of 5 % to GDP within the period of study (Adeoti, Adeyinka Chete & Ogundele, 2016).

The underproductive capacity of industrial sector can be tailored to several reasons, including ineffective industrial Policies, thereby leading to policy inconsistency, though the abysmal influence of SAP on Nigeria's industrialization is less substantive, the merging influence of trade and industrial policies remains debatable as the expected 'big push' appears negligible. The poor profile of Nigeria manufacturing sector yet shows a great potential which could be enhanced through policy and institutional incentives, thus, taken accounting of the policy environment in Nigeria.

In Nigeria, stylized fact indicates that manufacturing sub-sector has performed poorly in the past; this is due to the shocks in its contribution to economy's (GDP). In 1960, manufacturing sector only contribute 4.8%, this rose to 6.9% in 1965, and in 1970 it further increases to 7.2%, its contribution remain stagnant at 8.3%, and started dwindling in 1993 from 7.2% and by 2000 it reduces to 6.0% (CBN, 2003). In addition, the sector capacity utilization remains an abysmal in 1980 to about 75% in 1986, it fell to 42.7% and by 1990 it further reduces to 39.0%. These fluctuations continue until 1995 when the capacity utilization drastically reduced to 19.4%. Similarly, the rate of manufacturing subsector rose from1965and 1975 to 23.6% and 77% respectively. But still diminishes in 1980 to 6.6%. The only significant increase that is over 11% was in 1985 at 19.5% growth rate (CBN, 2000). What is clear is that, the industrial sector as a whole grew by 4.2% in 1980 to 1986 period, and also dropped from 1.06% to 0.72% in 2017 and 2020 respectively (CBN, 2000). The future of the sector is revamping economic development with the quantum and varied resources that can effectively enhance mass production and export market thereby strengthening the economy from over reliance on oil earnings (Osagie, 2011).

In light of the country's reliance on oil, a sharp decline has been witnessed in the manufacturing sector as capacity utilization has been fully optimized; statistics shows that since 1999, the trend has continue to increase and getting to 55 % in 2020. This significant growth is possibly influenced by the civilian administration that came into power, and its policy measure that tried to peg the manufacturing sector and make it more export driven. The slow pace contribution of the GDP suggests that trade policy is yet to stimulate the sector as expected to make significant effect on the economic growth. In 2010, the sector posited 6.2% of total Real GDP, in 2011 it increases simultaneously by 8.79% of real GDP and 8.66% in 2012. However, the most significant growth was 8.01% in 2012 to 2016, and sharply fell in 2017 to 2020 by 3%, due to the unanticipated economic recession; the growth has not been consistent overtime due to policy inconsistencies. This could have led to low productive growth in the sector. With huge expectations from industrialization, the sector is with mostly favored blueprint of several industrial policies that are in place in the country. According to Egbon (2015), the manufacturing sector is the most favored in Nigeria, most importantly as the engine of growth, structural change and self-sufficiency and that industrial policies are directed towards enhancing the economic outcome of individual agents, firms and industries. In light of these policies, the output of the sector has not been living up the required standard.

The above scenario logical leads to question the role of trade and industrial policies in supporting and sustaining manufacturing sectors of the economy to drive industrial output. Specifically, it is cogent enough to ask whether the African continental free trade, in addition to the various industrial policies and reforms undertaken in Nigeria are sufficient to serve as a springboard for the needed industrialization and diversion of the economy that will drive growth process through the manufacturing sector of the economy. Smith absolute advantage, opined that a country economy should be controlled by free hand, that is, the forces of competition. This theory emphasizes on the impact of division of labour as it is important economic forwardness. The main objective of the theory is that of international trade should be expanded, as it is an important method of enhancing division of labour. Ban on international trade restricts the size of the market, also reduces international specialization and thereby lower domestic output.

The idea of smith on absolute advantage was later fissile by a more substantive theory of comparative advantage; the comparative advantage theory states that countries should concentrate on the production and exporting of goods which they

have comparative advantage The widening of free trade between countries of the world leads to an increase in demand thereby enabling them to concentrate in the production of that particular good over which they have a comparative advantage. The rise in production will leads to an increase in supply of goods and services in the market, thereby enhancing societal welfare. Well, several criticism have been characterized with Smith and Ricardo theories as both theories were underpinned as they cannot be applied for a developing countries like Nigeria. Despite its theoretical front, the theory also suffers from many of the assumptions that are considered inherent. The theory assumes that there is no factor intensity reversal, if this does not occur, the prediction of the theory cannot stand. Against this backdrop, the Classical trade theory offers more momentum after the work of Prebisch (1950) who concurred to the implementation of protectionist trade policies to protect new growing industries and stressed that trade openness will encourage unequal distribution of gains accrued to trade and deindustrialization in developing countries.

Past studies have mainly concentrating on the relationship between trade and industrial policies in line with manufacturing sector. Trade openness and policy direction have found to be germane in the sustainable structural diversification and industrial development (Mulaga and Weiss 1996; Kim 2000; Chandran & Munusamy 2009; Umoru & Eborieme, 2013; Dastidar 2015). On Nigeria front, Arogundade, Obalade and Ogumakin (2015) affirmed that with sound trade and industrial policies in Nigeria, Manufacturing sector will contribute to make significant impact to gross domestic product. The results further revealed that inflation; rate of interest and import affect manufacturing output negatively, tariffs affects growth of manufacturing sector positively. Adebiyi and Dauda (2004) empirically investigated the impact of trade policy and industrial growth performance in Nigeria, using an Error Correction Model, it uses time series data spanning 1973 and 2001. The result shows that openness and export were significant to industrial production. In Nigeria several studies have investigated on this area such as: Adewuyi (2006) who investigated the effect of policy reform on technical efficiency employing panel data for 10 manufacturing sub-sectors during the Structural Adjustment Programme (SAP). Data Envelopment Analysis (DEA) was employed for this purpose. The result shows that trade policy enhances technical efficiency to a greater height. Similarly, Mouelhi (2007) studied the effect of trade policy on the manufacturing sector in developing countries citing India as an example; he uses the generalized methods of moment estimator and discovered that reduction in levels of tariffs and non-tariff barriers has no significant effect on

growth of the manufacturing sector. Bakare and Fawehinmi (2011) provides a stronger argument by analyzing the relationship between openness and non-oil industrial sector from 1979-2009 using Error Correction Model The result shows trade openness has a significant effect on non-oil industrial output in Nigeria.

Similarly, Umoru and Eborieme (2013) investigated the impact of trade liberalization on industrial growth in Nigeria, using time series data and ECM with the framework of Ordinary Least Square estimation for the period of 1970-2010. The finding shows that there is a positive and significant correlation between trade liberalization and industrial growth in Nigeria. This viewed is supported by Asongo, Jamala, Joel and Waindu (2013) who investigated the impact of trade liberalization on industrial growth using industrial sector as a benchmark, findings shows the existence of a positive relationship between the manufacturing output and the Gross Domestic Product. Edeme and Karimo (2014) investigated the effect of economic liberalization on industrial sector performance in Nigeria; the study uses the Ordinary Least Squares regression technique for estimation. The result shows that economic liberalization has a significant effect on performance of the Nigerian manufacturing sector. In the same vein, Ayinde (2014) uses Generalized Autoregressive Conditional Heteroscedasticity (GARCH) technique to investigate the effect of exchange rate volatility on the performance of manufacturing firms in Nigeria for the period spanning from 1986 to 2012. The results revealed exchange rate negatively and significantly impacts on manufacturing sector in Nigeria.

This study is aimed at validating past literatures by examine the impact of trade and industrial policy on manufacturing sector in Nigeria and the expected role of African continental free trade. A major shortfall in past empirical studies is the watery examination on the effect of African free trade agreement on its drive towards salvaging the manufacturing sector, through trade and industrial policies. The country is gasping for virgin policies and reforms and all economic prescription to round off identify structural weakness in the past have been grossly undermined. It is evident that the country's desire for a more productive manufacturing sector is the African continental free trade agreement, which may likely provide the required channel, with the right policies and reforms transmit to the industrial growth, this provides the basic intuition for this study. Other shortfall in the past studies is that, although scholars used time series aggregate data, the possibility of break in series was not given much attention, while testing the relationship; without doubt, this might have huge negative implications on the validity of inference. Efforts were made to close this vacuum in this study. More so, past empirical studies on Nigeria

investigated the impact of trade and industrial policies on manufacturing sector individually, here, an effort is made to use a single framework and their joint impact is examined. From the forgoing, the paper seeks to examine the impact of trade and industrial policies and to ascertain of African continental free trade really enhance manufacturing sector in Nigeria. Following the introduction, the rest of the papers have the following structure. Methodology is contained in section 2. The empirical result and discussion are discussed and presented in section 3. The paper is concluded in section 4.

2. Methodology

Annual data from 1980 to 2020 were sourced from different acknowledged and publishable sources, Labour force, capital for investment and manufacturing output were sourced from National Bureau of Statistics (NBS) ,while data on exchange rate and the rate of tariff were sourced from Central Bank of Nigeria (CBN), trade Openness (OPEN) was sourced from the World Development Indicators for Nigeria (WDI).This period of investigation is premised on the era being one of pronounced macroeconomic stability, characterized by unfavorable balance of payments and exchange rate, high commodity prices, and declined sources of revenue, due largely to economic rigidity which exposed the country to global economic shocks. In line with the objective of this paper, there is the need for dynamic analysis which links trade, industrial policy and manufacturing sector growth which is recent and emerging. In this study, the Structural VAR (SVAR) technique was employed to capture the relative interaction of the identified determinants of trade and industrial policies in Nigeria. Using VAR is much better to examine the short and long run causality dynamics, provided the variables are cointegrated (Ang & McKibbin, 2007). A major advantage of VAR is that in the system, there is absence of discrimination between the exogenous and endogenous variables. Hence, all the variables are taken as endogenous and the VAR system does not impose apriori restrictions on structural relationships. Because the dependent variables are expressed in terms of predetermined lagged variables, it is a reduced form or unrestricted model (Ang & McKibbin, 2007). In addition, the relative determinant of variation in a variable in terms of its own value and in the value of another variables can be examined once the model has been estimated using Impulse response function (IRF) and the Variance Decomposition theoretically, the model is specified as follows

$$\Delta S_t = \beta_0 + \beta_{1t} + \beta_2 S_{t-1} + \sum_{i=0}^{p} \varphi_i \Delta S_{t-i} + \varepsilon_t \text{----------(1)}$$

Where β_0 , β_1, β_2 and φ_i----------φ_p are parameters to be estimated, and ε_t is the white noise. S is the vector of regressors as defined previously, Δ is the lag operator. The dynamic model is specified as thus:

$MO_1 = \alpha_0 + Lnk\alpha_1 + LnL\alpha_2 + LnEXCH\alpha_3 + LnOPEN\alpha_4 + LnTAR\alpha_5 + \mu_1$---------- (2)

In the production function and in the context of this study, K = Capital (measured by gross fixed capital formation in the context of this study L =labour, trade and industrial policies indicators like exchange rate (EXHR), Openness (OPEN), tariff (TAR), Manufacturing output and productivity (MO) and μ = white noise. It is expected that $\alpha_1 \; to \; \alpha_6 > 0$ variables were used in logarithm in order to correct for heteroscedasticity.

For this study, six unit root tests were used in the study, namely three traditional tests without break and another three to capture breaks in series. The three traditional tests are the Phillips-Perron (PP), Augmented Dickey-Fuller (ADF) and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests. For those dealing with structural breaks, the Zivot and Andrews (1992), Perron and Vogelsang (1992) and Perron (1997) tests were carried out. A crucial part of traditional test with structural break is the trend of the variables.

Sen (2003) stressed that when data trend upward, the ability to eject the alternate hypotheses is minimal, in that the critical values increase when a trend variable is concluded. Consequently, Perron (1989) maintains that time series can be modeled sufficiently either y model A or model C. Sen (2003) further stressed that using Model C leads to a substantial loss of power if the break actually occurs in model A. if the break however occurs in model C, but modeled A is applied, the loss in power is minimal.

Test of cointegration followed the unit root tests. Because breaks in series can significantly affect standard inference, hence, it is important to ensure the presence of structural break in the series before proceeding to cointegration. We followed the approach developed by Johansen, Mosconi and Nielsen (Johansen et al., 2000).

To implement the JMN procedures, the maximum lag to be employed was established for the long-run estimates, we include dummies to capture the structural breaks reported by the stationarity tests conducted. The generalized test regression can be expressed as:

$$y_t = \mu + \theta DU_t + \beta_t + \gamma DT_t^* + \delta D(T_1)_t + \alpha y_{t-1} + \sum_{i=1}^{k} c_i \Delta y_{t-1} + e_t; e_t \sim iid.(0, \sigma_e^2 \text{ ----------(2)}$$

Where $DU_t = 1; DT_t^* = t - T_1 = t - T_1$ if $t > T_1$ and 0 otherwise; the T_1 represents the significant break point

The test considered is the minimal value of the t-statistic for testing, the implementation of the test regression follows the Innovational Outlier (IO) framework, as it allows the change to the new trend function to be gradual rather than being instantaneous as assumed by the Additive Outlier (AO) framework.

3. Results and Discussion

The pre-estimation test result of stationarity and cointegration are shown in the Table 1 below:

Table1. Results of Unit Root

Variable	ADF	PP	KPSS
MPI	-1.7834	-1.7795	0.1929**
CAPITAL	-1.8252	1.8240	0.1925**
LFORCE	-1.3868	-1.3868	0.1965**
EXCHR	-1.3992	-1.3992	0.1944**
OPN	-1.3955	1.3955	0.1964**
TARRIFF	-1.6534	-1.7854	0.1935**
ΔMPI	-4.9963*	-4.9597*	0.0809
ΔCAPITAL	-4.8928*	-4.8431*	0.0828
ΔLABOUR	-3.4709**	-7.7374*	0.0714
ΔEXCHR	-7.7316*	-7.8686*	0.0644
ΔOPNESS	-3.4545***	-7.7280*	0.0719
ΔTARRIFF	-3.6648**	-7.4777*	0.0574

***, ** and * indicates rejection of the null hypothesis at 10%, 5% and 1% level
Source: Author's computation.

In the above, all three pre estimation tests indicated that all the variables are stationary at first difference. Thus, at levels is rejected for all the variables. All three

test results are consistent. The result of the unit root test with structural break by Perron-Volgesan (2006) is presented below:

Table 2: Unit Root Tests with a Structural Break

	Innovational Outlier Model		Additive Outlier Model	
Variable	t-statistics	Break Date	t-statistics	Break Date
MPI	-4.1259	2011	-3.9041	1989
CAPITAL	-3.1392	1989	-7.5776*	1988
LFORCE	-3.0358	1994	-3.5700	1989
EXCHANGE	-3.7685	1988	-3.6472	1989
OPN	-3.0231	2014	-3.2383	1993
TARRIF	-3.1674	2012	-3.4231	2005
ΔMPI	-8.9549*	1997	-5.3130*	1988
ΔCAPITAL	-9.2988*	1991	-5.2050**	1996
ΔLABOUR	-7.7369	2015	-8.9324*	1994
ΔEXCHR	-7.7417*	2017	-8.6081	2007
ΔOPN	7.7341*	2000	-8.9281	2010
ΔTARRIF	-9.7598*	19981	-8.6735	2014

Note: * and ** denote significant at the 1 and 5 percent level. Source: Author's computation.

From table 2 above, the result shows that the null hypothesis of a unit root with break can't be rejected at every point except for CAP in the additive outlier, implying that there is stationarity in all the variables after first difference. The difference in the break dates is imperative, due to difference in the framework employed, it is necessary to state that the results are consistent for the two types of models. In line with the results of the unit root tests conducted, it is therefore correct to conclude that the series each contains a unit root with a break. The test result for Error Correction model was conducted below;

Table 3: Short run Parsimonious Result

Variable	Co efficient	Standard error	t-statistics	Probability
DMAN(-1)	0.69810	0.07986	8.74192	0.0000
DLK	0.14449	0.05754	2.51020	0.0260
DLOPEN(-1)	0.47194	0.29459	0.60203	0.1248
DLK(-1)	-0.02120	0.05557	-0.38146	0.6090
LOPEN	-0.14511	0.06177	-2.34926	0.0253
DLL	1.08840	0.39349	2.76605	0.0260
DLL(-1)	1.12662	0.31392	3.58915	0.0033
DLTAR	0.88015	0.32553	-2.98025	0.0306
DLTAR(-1)	0.19697	0.08558	-2.41847	0.0710
DLEXCH(-1)	-0.38484	0.06592	-5.83828	0.0011
DLEXCH(-1)	-0.03872	0.07693	-0.64732	0.4287
ECM (-1)	-0.88878	0.12396	-7.16979	0.0001
C	0.13596	0.05663	2.40096	0.0220

Diagnostics: R-squared 0.977365, Mean dependent Var 0.086809, Adjusted R-squared 0.842094 S.D. dependent Var 0.238540,F-statistic 9.22740 Durbin-Watson stat 2.266847, Prob (F-statistic) 0.000024.
Source: Author's computation.

Tariff exhibit a positive signs in both current and previous lagged value and this is far from theoretical prepositions. In other words, 1% increase in current and one period lagged value of tariff will increase the manufacturing subsector by 88% and 20% respectively in the short run. The results is also revealing as the coefficients are statistically significant and capable of influencing manufacturing subsector output in Nigeria at 5% significant level. This is because the probability values of 0.03 and 0.07 are significantly less than 0.04. Similarly, the coefficient of exchange rate is negative, but statistically significant with manufacturing subsector as shown above. This means that a 1% rise in exchange rate led to 21% decrease in manufacturing output all things being equal. The result further revealed that past exchange rate has no significant impact on manufacturing output in Nigeria, implying that in real terms a 1 % rise in one period lagged exchange rate would lead to a 0.04 % and 0.05% decrease in manufacturing output respectively.

Furthermore, the current exchange rate is significant, while one period lagged exchange rate has no significant impact in enhancing manufacturing output.
The above result further reveals the goodness of the specified functional relationship with 0.977 R-squared and 0,842 adjusted R-squared, it revealing that the Manufacturing sector development model has a significant goodness of fit. Simply put the result of adjusted R^2 shows 84 % of total variation in the dependent Variable was accounted for by variations in the independent variables (tariffs, exchange rate rate, trade openness, labor force and capita for investment. This implies the estimated model has high explanatory power. The result of the F-statistic with 9.23 shows the model is significant, the probability value of the F-statics measures the joint statistical significant of the coefficients included in the model, based on the probability value, the coefficient are jointly statistically significant. The probability value also lends credence to the R^2 which is statistically significant. Hence, the model is statistically significant, revealing that there is a high degree of linear relationship between the variables employed in the model. Similarly, the Durbin-Watson statistic of 2.26 is within the acceptable region signifying absence of autocorrelation. The result further revealed the residuals were not correlated implying no serial correlation in the model.

The SVAR analysis adopted the use of structural innovation accounting through variance decomposition and response impulse function which is derived from short-run response restriction matrices. The result shows effect of different shocks: shock 1 as Tariff shocks, shock 2 as Exchange rate shocks, shock 3 as degree of openness shocks, shock 4 as Labour force shocks, shock 5 as manufacturing productivity (own) shocks and shock 6 as Capital shocks.

Table4: Variance Decomposition of LRMQF

Period	S.E	Shock 1 TARIF	Shock 2 EXCH	Shock 3 TRADEOPN	Shock 4 LFORCE	Shock 5 CAPITAL	Shock 6 MAN
1	0.0 64657	18.0000	0.065892	0.465135	0.790341	0.965122	89.653139
2	0.741775	22.65129	1.111339	7.89609	1.034771	3.112988	73.733168
3	0.802387	29.06724	3.452525	9.157238	1.892189	2.430804	63.720352
4	0.848930	33.29289	3.770081	11.141667	2.968729	6.826636	53.835073
5	0.901518	41.04201	3.421189	6.224130	1.543875	10.76879	44.623835
6	0. 963092	41.61577	3.912796	8.338821	2.671803	13.46081	35.914693
7	0.102791	50.99154	4.929564	12.373831	4.132999	15.57206	28.275661
8	0.109190	50.44726	6.053631	14.346775	5.656238	17.49609	18.619280
9	0.115419	56.27544	7.145985	15.310446	7.114050	19.15408	16.938673
10	0.121410	62.65685	8.161328	19.292394	8.478225	20.41120	11.20222

Source: Author's Computation. Factorization: Structural

Table 4 indicates the SVAR variance decomposition result, the result shows that manufacturing productivity significantly accounted for its own variations with a diminishing effect; failing from 89.6 percent in the first year to as low as about 11 percent in the tenth year. Shocks to tariff accounted for the second most significant variations in manufacturing productivity: with progressive increase noticeable over time. The impact rose from 18.0 percent in the first year to as high as 63%.percent in the tenth year. Similarly, trade openness also recorded increasing variations in manufacturing productivity overtime rising from 0.46 in the first year to 19 percent in the tenth year with a peak 19.3 percent recorded in the ten tenth year. Capital, labour force and exchange rate also influence manufacturing productivity progressively overtime. By implications, the result shows that variations in manufacturing productivity respond to policy and non-policy shocks with a lag. It suffices to say therefore that policy consistencies are crucial for the enhancement of the free trade agreement for Nigeria. Similarly, variations in trade openness respond more to its own shocks in the short run. Its respond to other shocks in the model recorded zero in the first year. Variations in trade openness to manufacturing productivity shocks show a long run profile which implies trade openness flow to manufacturing sector in Nigeria appears negligible in the short run. Tariff, exchange rate, labor force and capital shocks produce marginal variations in trade openness in the short run with progressive influence noticeable in the long run.

Table 5: Impulse Response Function

	Shock 1 TARIF	Shock 2 EXCH	Shock 3 TRADEOPN	Shock 4 LFORCE	Shock 5 CAPITAL	Shock 6 MAN
1	0.012387	0.001791	-0.005298	-0.01621	0.035421	0.074752
2	0.046632	0.023316	-0.039137	0-.02626	0.025112	0.060612
3	0.035001	0.014102	-0.038472	-0.01938	0.028155	0.045998
4	0.025332	0.019496	-0.028638	-0.03284	0.038221	0.038009
5	0.024925	0.023686	-0.023734	-0.03874	0.034221	0.030244
6	0.022667	0.024954	-0.016845	- 0.03353	0.041123	0.024975
7	0.022668	0.025705	-0.009721	-0.03195	0.0485311	0.018177
8	0.033748	0.026211	-0.004704	-0.03037	0.0171532	0.012797
9	0.023054	0.029511	-0.000376	-0.02741	0.021171	0.007449
10	0.024002	0.026408	-0.003408	-0.02351	0.031171	0.002507

Source: Author's Computation. Factorization: Structural

Table 5 provides the impulse response result with manufacturing productivity responding to its own shocks (shock 6), tariff, exchange rate and capital are positive, while trade openness and labour force shocks are negative. The expansionary effect of exchange rate and tariff on manufacturing productivity was

established in Nigeria. This suggests that the role of African continental free trade agreement in explaining trade and industrial policy in Nigeria may be slow, but it will significantly enhance the manufacturing productivity in the long run. The impulse response pattern also shows that degree of openness has short run contractionary effect on manufacturing productivity, but potential expansionary effects in the long run.

In the same vein, the response of the manufacturing productivity and tariff is induced by the other policy variables. The response of the manufacturing sector shows the significant of tariff to its own shock. This implies that tariff channels are important variable that rejuvenate the African continental free trade agreement cum trade openness. Also tariffs response to exchange rate, trade openness, labour force and capital through marginal provides stringent policy options for promoting the trade agreement in Nigeria manufacturing sector. This further lend credence to the fact that of labour force and capital for investment are sacrosanct and requires the attention of the government in designing and harmonizing of the trade policy liberalization in reviving the on manufacturing subsector in Nigeria.

4. Conclusion and Recommendations

The trade and industrial policies in Nigeria is expected to spur growth of the manufacturing sector, the abysmal decay of the manufacturing subsector makes one wonder if the African continental free trade could arrest the situation, this has left many economists and policy makers to wonder if industrial and trade policies in Nigeria are actually design to enhance manufacturing sector in Nigeria. It is for this reason that the need to investigate if the free trade agreement really matters for the growth of manufacturing sector through trade and industrial and policies. Hence, this was investigated for the period of 1980-2020. Structural Vector Autoregression model (SVAR) technique was employed for the study. The empirical results revealed that African continental free trade agreement proxied by degree of trade openness is positively related and a key factor in enhancing trade and industrial policy in Nigeria cum manufacturing sector. Similarly, tariff rate, was found to have a negative impact on manufacturing sector growth but statistically significant in the error correction framework. It is thus concluded that for Nigeria, African continental agreement is a sine-qua-non in examining the effect of industrial and trade policy on manufacturing sector in Nigeria. The result further revealed that past exchange rate does not have any effect on manufacturing output in Nigeria. i.e. a 1% rise in present and past lagged of exchange rate would lead to a fall in manufacturing output. The result of the variance decomposition shows that Shocks

to tariff accounted for the second most significant variations in manufacturing productivity, with progressive increase noticeable over time. The impact rose significantly in the tenth year. The result of impulse response function revealed that manufacturing productivity responding to its own shocks, tariff, exchange rate and capital are all positive, the expansionary effect of exchange rate and tariff devaluation on manufacturing productivity was also established.

The paper recommends that, African continental free trade (trade openness) cum trade and industrial policy most especially the exchange rate and tariff must be stable over time or even reduced, so as to pivot the manufacturing sector in Nigeria country.

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