

Impact of Trade Liberalization on manufacturing output in Nigeria during the Period (1986-2018)

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ABSTRACT

The study aims to examine the impact of trade liberalization on manufacturing output in Nigeria. The objectives of the study are: to examine the impact of exchange rate, gross fixed capital and economic growth on manufacturing output. The study depends on following hypotheses: Exchange rate, Fixed Capital Formation and Economic growth dynamics have significant impacts on manufacturing output in Nigeria. The study used a Vector Auto Regression (VAR) model for the time series data during the period (1986-2018). The result shows that, exchange rate, has significant and negative impact on manufacturing output, even though it was positive in the long run. Furthermore, Gross Fixed Capital Formation and Economic growth have significant impact on manufacturing output in Nigeria. The study recommended that the focus of government industrial policy should be to encourage trade openness. The exchange rate should be strengthened and made more stable. The study shows that the introduction of growth induced policies will go a long way to improve and increase the output of the manufacturing sector in Nigeria.

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INTRODUCTION

Trade encourages nations to import products that are not readily accessible in their individual nation. Trade liberalization includes expelling hindrances to trade between various nations and empowering organized commerce. These obstructions to trade which trade liberalization expects to evacuate include: reducing tariff, reducing/eliminating quotas, reducing non-tariff barriers and so forth. Nigeria has historically tried to execute two particular trade systems (Kareem, 2010). The Nigerian government has made strong strides in promoting the manufacturing segment through a few strategies and incentives throughout the years. For instance, the Manufactures-in-Bond Scheme (MBS) intended to import duty free crude material inputs and other intermediate items for export. Another scheme is the Export Expansion Grant Scheme (EEG) which is an imperative incentive required for the incitement of export oriented exercises that will prompt critical development of the non-oil export segment of the economy. Trade liberalization got articulated through the appropriation of the IMF Structural Adjustment Program (SAP) in 1986 which its essential point was to rebuild and enhance the productive base of the Nigerian

economy. For instance, the Manufactures-in-Bond Scheme (MBS) intended to import duty free crude material inputs and other intermediate items for trade. Additionally the Export Expansion Grant Scheme (EEG) focused on the incitement of export oriented exercises equipped for leading to huge development of the non-oil trade division. Notwithstanding the introduction of these liberalization arrangements, the manufacturing division has not contributed altogether to GDP, particularly when contrasted and their exhibition in the late 80s which is under 10% of total GDP (CBN, 2016). The significant point of this research is to examine the effect of trade liberalization on the manufacturing sector in Nigeria.

Problem Statement

The Nigerian economy has been affected worsely since the application of Trade Liberalization policy. Trade Openness, Exchange Rate, Gross Domestic Product, and Gross Fixed Capital Formation, has been fluctuating. Its dynamics have been a major worry to manufacturing output in the country.

Objectives of the study

The specific objectives of the study are:

1. Determine the impact of exchange rate dynamics on manufacturing output in Nigeria.
2. Investigate the impact of gross fixed capital on manufacturing output in Nigeria.
3. Examine the impact of economic growth dynamics on manufacturing output in Nigeria.

Hypotheses

- 1) Exchange rate dynamics has a significant impact on manufacturing output in Nigeria.
- 2) Fixed Capital Formation dynamics has a significant impact on manufacturing output in Nigeria.
- 3) Economic growth dynamics has a significant impact on manufacturing output in Nigeria.

METHODOLOGY

Study seeks to examine dynamics of trade liberalization on manufacturing output in Nigeria for the period (1986-2018). The analysis made use of Vector Auto Regression (VAR) model in analyzing data gotten from CBN statistical bulletin and World Bank Development Index (2018). The variables used in the analysis are Manufacturing Output (MANOT), used as the Dependent Variable while Trade Openness (TO), Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), and Exchange Rate (EXR) form the Independent Variable.

Source of Data

The study employed secondary data. Ultimately the following sources of data will be utilized; the Central Bank of Nigeria Statistical Bulletin (2019) and World Bank Development Indicator (WDI) as updated in 2019.

LITERATURE REVIEW

International trade has existed through much of history and the motivation is hinged to the fact that the distribution of natural, human, and capital resources varies across economies. Different technologies or allocations of resources are required for the efficient production of various kinds of traded goods services. Moreover, preferences for traded goods and services also differ between

countries. As a result, international trade has provided the means through which countries have expanded their range of available goods and services and made up for those goods and services in which they are not better off producing. This has resulted in an increasing web of linkages in markets providing new possibilities for upgrading economic activities. It has allowed for worldwide sourcing strategies, which offers new scope for firms to participate in the global market, and also supplying many goods and services on a competitive basis. This interaction of countries in the world economy has been suggested to be an important avenue for countries to promote economic growth and development (Rondinelli, 2003).

Foremost in the drive for and shaping of the world trading system is the spread of industrialization from Europe, to the Americas, Asia and Africa; and the enormous technological advances in transportation and communications which have steadily led to reduction in the cost of moving goods, technology, capital, and people around the world (Caimcross, 1997). Developments such as the invention of steamships, construction of railroads and innovation of telegraphs, automobiles, airplanes and the internet have all contributed immensely to making the world a "global village". These have expanded the horizon of international trade. While the early development of international trade specifically, from the 16th up to the 20th centuries were barely influenced by trade liberalization, by the second half of the 20th century trade liberalization took the center stage in international trade (WTO, 2013).

The earliest activities in the direction of trade liberalization can be traced to the period between the 1820s and the 1840s of which, freer trade occurred based on bilaterally agreed reciprocal tariff reductions where agreements with other nations on mutual tariff reductions were done. However, from the late 1840s leading to the start of the second half of the 20th century countries began to unilaterally take decisions on reducing barriers on trade. Notable in this regard, is the repeal of the Britain's Corn Laws in 1846 which ended the country's use of tariffs previously put in place to protect its agriculture and industry from foreign competition. By that action, the country acted independently in reducing import duties. This followed partly from the failure of Britain to

obtain acceptable reciprocity agreements with other countries that were wary of allowing their domestic markets to be dominated by its leading industries. In addition, the new stance of policy was believed to boost the country's prosperity through cheap imports as consumers benefit and business costs are reduced. (Howe 1997; 1998; WTO 2007).

After the Second World War, political and economic cooperation that sought reductions of trade barriers across countries led to the creation of the General Agreement on Tariffs and Trade (GATT) in 1947. GATT was to be the formal institution to preside over trade among countries and lend a hand to iron out the potential difficulties that might arise. The establishment of GATT gave increased impetus to the considerable liberalization of world trade and aided the continuous growth of international trade (WTO, 2013).

GATT was a set of multilateral trade agreements directed at reducing trade barriers by lessening tariff duties and eliminating quotas among contracting countries. It sought to ensure that trade among member nations were conducted without discrimination. Member nations were to open their markets equally to every other member. Under GATT, an agreement between any two member countries of GATT to reduce a tariff would automatically be extended to every other member. This was referred to in the Most Favored Nation (MFN) clauses (GATT, 1994). Furthermore, GATT contained a long list of precise tariff concessions for each contracting nation, representing tariff rates that each country had agreed to extend to others. It also preferred the use of tariffs to import quotas or other quantitative trade restrictions for protection; it consistently pursued the elimination of the latter. GATT included other general rules such as the uniformity in customs regulations and the requirement of each member nation to negotiate reductions in tariffs on request by another. Even so, whenever trade concessions lead to excessive losses to domestic producers, GATT made provision for an escape clause allowing contracting nations to alter agreements through tariff adjustment (GATT, 1994; WTO, 2013).

Nigerian Economy and Trade Liberalization:

Since the introduction of trade liberalization, the performance of the manufacturing sector with regards to its

contribution to the Gross Domestic product (GDP) has been fluctuating (CBN, 2003). This has been the major concern of different economic policy makers within and outside the country. In view of these, and in order to achieve an accelerated pace of industrialization capable of producing and sustaining the nation's manufacturing needs, several industrial policies has been implemented, few of which includes: The industrial policy of 1988. The Nigerian Export processing zone Decree No. 34 of 1991. The foreign Exchange (monitoring and miscellaneous provision) Decree No. 17 of 1995. The Nigerian Enterprise promotion Decree of 1989. In 2000, the Nigerian industrial Development Bank (NBCI), Nigerian Bank for Commerce and Industry (NBCI) and the National Economic Reconstruction Fund (NERFUND) was merged to form the new Bank of Industry (BOI), to facilitate adequate supply of funds to the manufacturing sector (Olorunshola, 2002). The performance of the manufacturing sector in Nigeria cannot be over-emphasized, some of the roles performed by the manufacturing sector include: the provision of employment opportunities, reduction in importation and savings in foreign exchange, the diversification of the economy, an enlarged market for agricultural products, increase export earning, increase government revenue, a higher standard of living, and training of indigenous manpower.

Trade liberalization deals with the increasing breakdown of barriers and the increasing integration of the World market (Fafowora, 2000). In the works of Derossa, (2000), trade liberalization was referred to as the increasing international integration of international market for goods, tradable service and financial assets. In the real sense, it is also referred to the increasing integration of markets for major inputs to production, not only mobile physical capital but also labour in its various forms: basic labour, skilled labour and other professional services. Trade liberalization offers countries access to the global market which affords people greater opportunity to tap more and larger market around the World, giving them access to more capital flow, technology, cheaper import and larger export markets. It equally exposes countries to new ideas, products, and economies of scale in production and makes them gain efficiency in utilization of production resources (Adenikinju and Chete,

2003). However, a more integrated World economies is prone to some adverse consequences equally as it relates to financial management, environmental degradation and pace of development. Also, trade liberalization opens an economy to some financial crisis (UNEP, 2001). (Amos, 2000), viewed adverse effect of trade liberalization on the rate of inflation, when he said that lowering tariffs and relaxation of quantitative restriction can lead to expansionary fiscal and monetary policies knowing the goals of expansionary fiscal reform is to reduce budget deficit, the concomitant effect which is the rapid growth of money supply which will inevitably boost price inflation in an economy. Jerome and (Adenikinju, 1995), opined that Nigeria's non-oil export go mainly to West European Economic Community Countries, and more so, new markets are merging in Asia and other parts of the World especially in Sub-Sahara Africa. Also, in their comparative analysis of the performance of manufactured export between Nigeria and selected countries in Asia and Africa, they analyzed that manufactured export in Korea and Hong Kong accounted for 94% and 96% respectively, while that of Nigeria was 1% of the total GDP as at 1990. According to World Bank (2000), the Egyptian government responded to trade liberalization with impressive economic reform program that include, fiscal tightening that reduced the marginal tax rate and government budget deficit. Monetary reform adopted in Egypt also included re-controlling of interest rate, devaluation and unification of exchange rate, reducing growth of money supply and liberalizing capital account. Privatization was also introduced and thus foreign investors reacted quickly to this opportunity. In 1995, the total foreign Direct Investment (FDI) was \$400 million USD followed by \$800 million USD in 1996 and around \$1.2 billion USD in 1997. In the case of Nigeria, the net foreign Direct Investment was \$588 million USD in 1990 and \$897 million USD in 1992, then to \$1.96 billion USD in 1995 and \$1.53 billion USD in 1997, (Global Development Finance, 1999). Despite the reform in Egypt, and Nigeria, these countries are yet to take full advantage of the trade given their market size and border countries like Israel, Tunisia, Niger, Chad and others. Trade liberalization is thus, a multidimensional concept and may be viewed as the forging of multiplicity of linkages and

interconnectedness between States and the societies which make up the modern World called the global village. It is also a process by which occurrences, decision and activities in one part of the World come to have significance consequence on individual and communities in quite distant part of the globe.

Furthermore, 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.

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.

Trade Policies in Nigeria

Prior to 1980 only a few countries embraced free trade policies, amongst which were Japan, Hong Kong, Singapore, South Korea, and Taiwan (Hammouda, 2004). By 1990 a greater number of countries including; Chile, Ghana, Uganda, Kenya and Nigeria had begun liberalizing trade (Mwaba, 2000). The lessening or removal of barriers to the free exchange of goods among nations that ensues from the liberalization of trade widened possible opportunities available to countries for the upgrading of their economic activities, including the development of manufacturing.

Since 1960 Nigeria's trade policy, as observed by Adenikinju (2005), has gone through periods of high protectionism to its current more liberal stance. From 1960 up to the mid-1980s measures such as high import duties and quantitative restrictions were used to support trade policy which was intended to protect local manufacturing industries. This direction of policy was informed by the Import Substitution Industrialization (ISI) and indigenization policy of government towards

developing the industrial sector. The design of trade policy in this era was to support domestic production by the discrimination in favor of capital goods against consumer goods.

Between 1985 and 2000, Nigeria's trade policy shifted significantly towards greater liberalization of trade and the pricing system. This was intended at diversifying the export base of the country as well as adding value to the export of agricultural produce (Adenikinju, 2005). The adoption of the International Monetary Fund/World Bank's Structural Adjustment Programme (SAP) in 1986 remarkably influenced the freer posture of international trade in this era.

The introduction of SAP in Nigeria was in response to the economic problems brought about by the collapse of oil prices in the international market in the early 1980s, and the subsequent lowering of the country's Organization of Petroleum Exporting Countries (OPEC) output quota. Plummeting crude oil export revenues led to a sharp decline of Nigeria's public finances and balance of payments. As a result, the economy went into recession with a GDP growth of -5.37 per cent in 1983, and -5.18 per cent in 1984 (National Centre for Economic Management and Administration, 2004). Moreover, the worsening state of the economy manifested in shortage of foreign exchange, rising unemployment, and balance of payments deficits and debt crises. SAP was therefore aimed at substantially reducing the dependence on imports while enhancing the non-oil export base through changing and realigning the pattern of aggregate domestic expenditure and production in a bid to restore the steady and balanced growth of the economy (Federal Government of Nigeria, 1986; 1990).

The implementation of SAP led to the removal or abolition of the import and export licensing system, bureaucratic controls on trade, as well as foreign exchange control on all current transactions. In addition, to enhance access to foreign raw materials and intermediate goods for use by exporting firms in the manufacturing sector the duty drawback/suspension scheme was introduced (Omoke, 2007). Also put in place was the Second-tier Foreign Exchange Market (SFEM) allowing market forces determine the exchange rate of the naira? This price determination mechanism ended the use of administrative

discretion in the allocation of foreign exchange to end-users (Analogbe, 2000). SAP in Nigeria which was initially intended for the period 1986 – 1988, spanned up to the 2000s, and it has continued to influence policy in recent time.

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

An Overview of Manufacturing Policies in Nigeria

Nyor and Chinge (2014) articulated that the major objectives of adopting import-substitution industrialization (ISI) policy was mainly because of the nature of the agrarian economy that targeted at reducing the excessive burden on exchange rate and enabling Nigerian to have the prototype of foreign made goods locally.

The ISI policy intended to achieve industrialization through establishing foreign technology in Nigeria, create employment opportunity, encourage export and accelerate economic development. However, the policy helped greatly to promote local entrepreneurs that focused on production of consumer and intermediate goods. Efforts were also made by

the then government to encourage and sensitize indigenous ownership and management of industries. Other essential supporting industries such as power supply among others were also established. Low tariffs for imported input of production were among the action to support producers while there were high tariffs for importation of finished products. Consequently, small, medium and large scaled enterprises that concentrated on production of textiles, clothes, beverages, rubber, plastics, soap, detergents amongst others emerged. This gave rise to a major focus of consumer goods vis-à-vis manufacturing activities. The positive effect of the policy was an increase in medium and large-scaled industrial plants from 150 at independence to 380 in 1965 and raising manufacturing contribution to gross domestic product from 4.2 per cent to 6.1 percent in 1964 (Dagogo, 2014, Iwuagwu, 2011).

Ukaegbu (1991) asserted that the established industries based on ISI policy was characterized by inability to revolutionized production, lack of backward linkage in the economy, prevalence of highly-packaged technology, minor operation performance, lack of auxiliary industries, and little or non-existence of research and development activities amongst others. Disgustingly, most of the input of production and quality manpower were imported and plants and machinery were not used to its full capacity coupled with delay in repairs due to waiting for spare-parts to be imported (Chete et al (2015). Besides, the policy was adversely affected by the crisis of civil war in 1966. The civil war disrupted activities and so in 1970, the drive for industrial revival was contained in the Second National Development Plan of 1970-75 which includes: diversification of the economy, balanced development, indigenization of economic activity amongst others (Osuka, 2016). The National Development Plan was aimed at amending the Import Substitution Strategy and improving domestic production of intermediate goods and capital goods required by emerging industries. It was at this period the industrial structure was linked to agriculture which has been the main stay of Nigeria economy before the discovery of oil. The acquired wealth from oil was very helpful to the country in the acquisition of expensive industrial projects such as iron and steel, cement, salt, sugar, fertilizer, pulp, paper among others. The intention of the government

was to empower the people but was seriously constrained due to lack of indigenous technology (Chete, et al, 2015).

In the country's quest for developing its industrial base, she inculcated relevant policies in the second National Development Plan of 1970-1975 which focused on public sector-led industrialization among other intentions. This gave rise to direct government investment considering the fact that majority of the populace lack the required resources to embark on enterprises. The country's economy skewed more to public sector dominance in economic activities. However, the country was still recovering from the shocks and devastation of civil war. Besides, insufficient manpower retarded the possibility or aspiration to organize productive ventures. The major and minor economic activities were in the hands of foreign expatriates. In the quest to enable more Nigerians to be part and parcel of economic activities led to the promulgation of the 1972 Indigenization Act. This policy was later amended and replaced with the Nigerian Enterprises Promotion Act of 1977 which brought about Nigerian citizens wholly or partly ownership and control of foreign businesses; give opportunities for Nigerian domestic entrepreneurs amongst others. However, it can be stated that this policy was not completely favorable to Nigerians with regard to manufacturing sub-sector development because the required skills that was supposed to be acquired from the foreign controllers of large scale investment projects were missed. In order words, the technology of foreign operators in Nigeria has not been fully imparted to Nigeria before the emergence of indigenization policy.

The fourth National Development Plan also targeted on revamping the Nigerian industrial sector. But this period was when there was the world economic crisis that affected many countries adversely. However, it can be inferred that all efforts targeted at improving industrialization in Nigeria over the years could not achieve positive significant results, hence the situation intensified unemployment, low production and high importation, poverty and low living standard. At different times in the country leadership has not been consistent due to frequent coup resulting in a new military regime. Nevertheless, the country did not relent in its efforts to do something better. Hence, Structural Adjustment Programme (SAP) came

in 1986 as a way of overcoming most of the debilities and development bottleneck. Among the targets of SAP was encouraging investment, diversification of the economy through stimulating non-oil export, inward looking regarding the use of domestic raw materials and the use of local technology; promoting private sector-led development which gave rise to privatization and commercialization of state-owned enterprises (Newman et al, 2018). Export incentives were also made through Export Development Fund which was to financially assist the private sector exporting companies. The fund covered spending on training, seminars, advertising/publicity, and export research among others. Inducement was also given to exporters who exported N500000 worth of processed product through Export Expansion Grant (Igwe, 2007). Nevertheless, the progress made over the years was not significantly satisfactory in view of the population of the country and the low contribution to the gross domestic product showed insufficient activity in the sector. Still in the quest for industrialization, the country also adopted trade and financial liberalization policy in 1989 after the Structural Adjustment Programme (SAP). This policy aimed at encouraging competition among domestic firms

and others in order to promote efficiency; lessen tariff and non tariff barriers amongst others (Adeoye, 2004).

Considering the problem of funding of small and medium scale enterprises, the government came up with the establishment of Bank of Industry (BOI) in 2000 during the reign of President Obasanjo which main aim was the provision of short and long-term loans, technical support to industrial enterprises, employment creation and promotion of domestic entrepreneurs among others.

MODEL SPECIFICATION, ANALYSIS, AND THE RESULTS

Model Specification

In order to examine the relationship dynamics of trade liberalization on manufacturing output in Nigeria, the study depends on a linear model: $MANOT = F(X_i)$ (3.1), Where; $MANOT$ = Manufacturing Output, X_i = set of chosen explanatory variables. The chosen variables are reflected in the model as: $MANOT = F(TOP, EXR, GFCF, \text{ and } GDP)$ (3.2), Where: TOP = Trade openness. EXR = Exchange Rate. $GFCF$ = Gross Fixed capital Formation. GDP = Gross Domestic Product.

VAR Form:

$$MANOT_t = \alpha_0 + \alpha_1 \sum_{j=1}^K MANOT_{t-j} + \alpha_2 \sum_{j=1}^K TOP_{t-j} + \alpha_3 \sum_{j=1}^K EXR_{t-j} + \alpha_4 \sum_{j=1}^K GFCF_{t-j} + \alpha_5 \sum_{j=1}^K GDP_{t-j} + \varepsilon_{1t} \quad (3.3)$$

$$TOP_t = \alpha_0 + \alpha_1 \sum_{j=1}^K TOP_{t-j} + \alpha_2 \sum_{j=1}^K MANOT_{t-j} + \alpha_3 \sum_{j=1}^K EXR_{t-j} + \alpha_4 \sum_{j=1}^K GFCF_{t-j} + \alpha_5 \sum_{j=1}^K GDP_{t-j} + \varepsilon_{2t} \quad (3.4)$$

$$EXR_t = \alpha_0 + \alpha_1 \sum_{j=1}^K EXR_{t-j} + \alpha_2 \sum_{j=1}^K MANOT_{t-j} + \alpha_3 \sum_{j=1}^K TOP_{t-j} + \alpha_4 \sum_{j=1}^K GFCF_{t-j} + \alpha_5 \sum_{j=1}^K GDP_{t-j} + \varepsilon_{3t} \quad (3.5)$$

$$GFCF_t = \alpha_0 + \alpha_1 \sum_{j=1}^K GFCF_{t-j} + \alpha_2 \sum_{j=1}^K MANOT_{t-j} + \alpha_3 \sum_{j=1}^K TOP_{t-j} + \alpha_4 \sum_{j=1}^K EXR_{t-j} + \alpha_5 \sum_{j=1}^K GDP_{t-j} + \varepsilon_{4t} \quad (3.6)$$

$$GDP_t = \alpha_0 + \alpha_1 \sum_{j=1}^K GDP_{t-j} + \alpha_2 \sum_{j=1}^K MANOT_{t-j} + \alpha_3 \sum_{j=1}^K TOP_{t-j} + \alpha_4 \sum_{j=1}^K EXR_{t-j} + \alpha_5 \sum_{j=1}^K GFCF_{t-j} + \varepsilon_{5t} \quad (3.7)$$

Where: j is the lag length; K is the maximum distributed lag length α_0 is the constant terms ε_t is independent and

identically distributed error term. In matrix form, the above can be compactly specified as in equation (3.8):

$$\begin{bmatrix} MANOT_t \\ TOP_t \\ EXR_t \\ GFCF_t \\ GDP_t \end{bmatrix} = a_0 + \sum_{j=1}^K \begin{bmatrix} MANOT_{t-1} & TOP_{t-1} & EXR_{t-1} & GFCF_{t-1} & GDP_{t-1} \\ TOP_{t-1} & MANOT_{t-1} & EXR_{t-1} & GFCF_{t-1} & GDP_{t-1} \\ EXR_{t-1} & MANOT_{t-1} & TOP_{t-1} & GFCF_{t-1} & GDP_{t-1} \\ GFCF_{t-1} & MANOT_{t-1} & TOP_{t-1} & EXR_{t-1} & GDP_{t-1} \\ GDP_{t-1} & MANOT_{t-1} & TOP_{t-1} & GFCF_{t-1} & EXR_{t-1} \end{bmatrix} \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_4 \\ \alpha_5 \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \end{bmatrix} \quad (3.8)$$

Unit Roots Test

Unit roots test (ADF) conducted to ascertain whether the variables in the model are stationary. This is necessary as it helps to avoid spurious regression results. The

summary of Unit Root Tests (ADF) results using E-views software is detailed in the Table 1.

Table 1: Summary of ADF test results at 1%, 5% and 10% critical value

Variable	Order of Integration	ADF Test Statistics	ADF Critical Value			Lag Length	Decision
			1%	5%	10%		
MANOT	I ~ (2)	-3.543292	-	-	-	4	Reject H_0
			3.711457	2.981038	2.629906		
TOP	I ~ (1)	-7.215750	-	-	-	0	Reject H_0
			3.661661	2.960411	2.619160		
EXR	I ~ (1)	-4.098164	-	-	-	1	Reject H_0
			3.670170	2.963972	2.621007		
GFCF	I ~ (1)	-4.754055	-	-	-	0	Reject H_0
			3.661661	2.960411	2.619160		
GDP	I ~ (1)	-4.579122	-	-	-	0	Reject H_0
			3.661661	2.960411	2.61916		

Source: Research output 2022

From the table, it can be observed that the variables are not stationary at level form but became stationary after first difference and second differencing which implies that the variables (TOP, EXR, GFCF and GDP) are integrated of order one (I ~ (1)) whereas

MANOT was integrated of order two (I ~ (2)) stationary at second differencing.

Co integration Test for VAR Model

The test is summarized below:

Table 2: Summary of the Max- Eigen Statistics for Co integration

Unrestricted Co integration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigen value	Max- Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.786667	113.3712	69.81889	0.0000
At most 1 *	0.643109	65.47928	47.85613	0.0005
At most 2 *	0.460853	33.53917	29.79707	0.0177
At most 3	0.322040	14.38842	15.49471	0.0729
At most 4	0.072697	2.339724	3.841466	0.1261

Trace test indicates 3 co integrating eqn (s) at the 0.05 level

Source: Research output 2022

The Table 2 summarizes the max- Eigen statistics which was used to determine the co integrating vectors in the model. The test indicates 3 co integrating equations at 5% level

thus satisfying the condition for the existence of long run relationship amongst the variables. This condition states that there must be at least one co integrating equation for there to be a

long run relationship in a model. The test shows that we reject the null hypothesis of $r = 3$ and accept the alternate of $r > 3$ which denotes the existence of 3 co integrating equations in the model. Thus, we conclude that trade openness; exchange rate, gross fixed capital formation and gross domestic output have long run implications on manufacturing output in Nigeria.

Short-Run Estimate

The Vector Error Correction Mechanism (ECM) was used to obtain the short-run estimate at 5% level of significance. The result from the ECM is presented in table 3 below.

Table 3: Correction Mechanisms

Variable	Coefficient
ECM (-1)	-1.14E+10

Source: Author's Analysis, 2022.

From the result in Table since the coefficient of the ECM (-1) which is negative we say that there is convergence.

Granger Causality Test

It is summarized below:

Table 4: Summary of Granger Causality Test

Pairwise Granger Causality Tests

Date: 09/02/20 Time: 15:37

Sample: 1986 2018

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
TOP does not Granger Cause MANOT	31	1.13368	0.3372
MANOT does not Granger Cause TOP		2.97112	0.0689
EXR does not Granger Cause MANOT	31	1.66049	0.2096
MANOT does not Granger Cause EXR		8.80437	0.0012
GFCF does not Granger Cause MANOT	31	2.24863	0.1257
MANOT does not Granger Cause GFCF		1.67147	0.2075
GDP does not Granger Cause MANOT	31	3.44066	0.0472
MANOT does not Granger Cause GDP		1.58319	0.2245
EXR does not Granger Cause TOP	31	1.03472	0.3695
TOP does not Granger Cause EXR		1.37661	0.2702
GFCF does not Granger Cause TOP	31	2.95389	0.0698
TOP does not Granger Cause GFCF		1.07058	0.3574
GDP does not Granger Cause TOP	31	0.93749	0.4044
TOP does not Granger Cause GDP		0.49418	0.6157
GFCF does not Granger Cause EXR	31	4.33955	0.0236
EXR does not Granger Cause GFCF		0.93892	0.4039
GDP does not Granger Cause EXR	31	6.20811	0.0063
EXR does not Granger Cause GDP		3.66449	0.0396

GDP does not Granger Cause GFCF	31	5.26392	0.0120
GFCF does not Granger Cause GDP		3.34474	0.0510

Source: Research output 2022

The Granger causality test shown above in Table 4.3 reveals that there is Uni-directional causality between most of the variables. This is evident in the causal relationship between Manufacturing Output (MANOT) and Exchange rate (EXR), Manufacturing Output (MANOT) and Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF) and Exchange rate (EXR), Gross Fixed Capital Formation (GFCF) and Gross Domestic Product (GDP) etc. However, bi-directional causality exists between Gross Domestic Product (GDP) and exchange rate (EXR). The implications of these causal relationships is that the variables that granger causes the other can be used to predict the future outcome of the other. In other words, the bidirectional causality implies that the current trend or movement in one variable can be used to predict future growth of another variable and vice versa. The unidirectional causality between

the variables implies that the current rate of one variable can be used to predict future growth in manufacturing output; all things being equal.

Selection of Optimal Lag

In order to carry out vector auto regression estimation, the choice of lag length is vital. There is various lag length criteria, among them are; Sequential modified LR test statistic with each test at 5%, the Final prediction error (FPE), Akaike information criterion (AIC), Schwarz information criterion (SC) and the Hannan-Quinn information criterion (HQ). However each of these has different penalty factors. For the purpose of this study, we therefore limit the selection to Akaike information criterion (AIC) and Schwarz information criterion (SC). From the result, the two criteria revealed 3 optimal number of lag to be used for the VAR analysis. The result is presented below in table 4.5 below

Table 5: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2638.088	NA	2.31e+70	176.2059	176.4394	176.2806
1	-2481.706	250.2109	3.72e+66	167.4471	168.8483	167.8953
2	-2442.932	49.11434	1.73e+66	166.5288	169.0976	167.3506
3	-2395.011	44.72612*	5.80e+65*	165.0007*	168.7372*	166.1961*
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Author's Analysis 2022

VAR TEST ESTIMATES

Manufacturing Output Equations:

From the result below in table 4.6 below, it was revealed that manufacturing output to itself in the 1st period was positive while in the second period was negative this implies that changes in manufacturing output affects its own movement positively in the first period at about 0.987625 and negatively at about -0.551032. Trade openness to manufacturing output in the first period was negative while at the second period was also

negative this implies that changes in trade openness affects manufacturing output movement negatively in the first and second period at about -1.64E-09 and -1.15E-10. Exchange rate to manufacturing output in the first period is negative while at the second period was positive, this implies that changes in Exchange rate affects manufacturing output movement negatively in the first period at about -2.97E-09 and positively at about 3.50E-09. Gross Fixed Capital Formation to manufacturing output in the first period was

positive while at the second period is negative, this implies that changes in Gross Fixed Capital Formation affects manufacturing output movement positively in the first period at about 1.777538 and negatively at about -3.672427

Gross Domestic Product to manufacturing output in the first period was positive while at the second period was also positive. This implies that changes in Gross Domestic Product affects manufacturing output movement positively in the first and second period at about 117.7638 and negatively at about 63.71830.

Trade Openness Equations

From the result below in table 4.6 below, it was revealed that trade openness to itself in the 1st period was negative while in the second period was positive this implies that changes in trade openness affects its own movement negatively in the first period at about -0.117178 and positively at about 0.013051. manufacturing output to trade openness in the first period was negative while at the second period was also negative this implies that changes in manufacturing output affects trade openness movement negatively in the first and second period at about -47748643 and -48052947. Exchange rate to trade openness in the first and second period was positive, this implies that changes in Exchange rate affects trade openness positively in the first and second period at about 0.071020 and 0.041917. Gross Fixed Capital Formation to trade openness in the first and second period was negative; this implies that changes in Gross Fixed Capital Formation affects Trade openness movement negatively in the first and second period at about -2.10E+08 and -2.76E+08. Gross Domestic Product to trade openness in the first period was positive while at the second period was also negative. This implies that changes in Gross Domestic Product affects trade openness movement positively in the first period and negatively in the second period at about 4.84E+10 and -2.47E+10 respectively.

Exchange Rate Equations

From the result below Exchange rate to itself in the 1st period was positive while in the second period was negative this implies that changes in Exchange rate affects its own

movement positively in the first period and negatively in the second period at about, 4.32E+08 and -5.24E+08 respectively. Manufacturing output to exchange rate in the first period was positive while at the second period was negative this implies that changes in manufacturing output affects exchange rate movement positively in the first and negatively in the second period at about 28470587 and -17467775. Trade openness to Exchange rate in the first and second period was positive and negatively respectively, this implies that changes in trade openness affects exchange rate positively and negatively in the first and second period at about 0.730893 and -0.003849. Gross Fixed Capital Formation to Exchange rate in the first and second period was positive and negative respectively; this implies that changes in Gross Fixed Capital Formation affects Exchange rate movement positive and negative in the first and second period at about 4.32E+08 and -5.24E+08 respectively. Gross Domestic Product to Exchange rate in the first period was negative while at the second period was positive. This implies that changes in Gross Domestic Product affects Exchange rate movement negatively in the first period and positively in the second period at about -2.27E+10 and 6.95E+10 respectively.

Gross Fixed Capital Formation Equations:

From the result below Gross Fixed Capital Formation to itself in the 1st period was positive while in the second period was negative this implies that changes in Gross Fixed Capital Formation affects its own movement positively in the first period and negatively in the second period at about, 0.930895 and -0.188654 respectively. Manufacturing output to Gross Fixed Capital Formation in the first period and second period was positive this implies that changes in manufacturing output affects Gross Fixed Capital Formation movement positively and second period at about 0.107043 and 0.014292 respectively. Trade openness to Gross Fixed Capital Formation in the first and second period was negatively, this implies that changes in trade openness affects Gross Fixed Capital Formation negatively in the first and second period at about -2.57E-12 and -1.88E-10. Exchange rate to Gross Fixed Capital Formation in the first and second period was positive and negative respectively; this implies

that changes in Exchange rate affects Gross Fixed Capital Formation movement positive and negative in the first and second period at about $-8.80E-10$ and $7.38E-10$ respectively. Gross Domestic Product to Gross Fixed Capital Formation in the first period was positive while at the second period was negative. This implies that changes in Gross Domestic Product affect Gross Fixed Capital Formation movement positively in the first period and negatively in the second period at about 162.1407 and -133.2813 respectively.

Gross Domestic Product Equations

From the result below Gross Domestic Product to itself in the 1st period was positive while in the second period was negative this implies that changes in Gross Domestic Product affects its own movement positively in the first period and negatively in the second period at about, 1.230404 and -0.482827 respectively. Manufacturing output to Gross Domestic Product in the first period and second

period was positive this implies that changes in manufacturing output affects Gross Fixed Capital Formation movement positively and second period at about 0.000155 and $-3.46E-05$ respectively. Trade openness to Gross Domestic Product in the first and second period was positive; this implies that changes in trade openness affects Gross Domestic Product positively in the first and second period at about $4.81E-13$ and $6.84E-13$. Exchange rate to Gross Domestic Product in the first and second period was negative and positive respectively; this implies that changes in Exchange rate affects Gross Domestic Product movement negative and positive in the first and second period at about $-1.86E-12$ and $3.08E-12$ respectively. Gross Fixed Capital Formation to Gross Domestic Product in the first and second period was positive. This implies that changes in Gross Fixed Capital Formation affect Gross Domestic Product movement positively in the first and second period at about 0.001001 and 0.000313 respectively.

Table 6: Summary of the VAR Estimates

	MANOT	TOP	EXR	GFCF	GDP
MANOT(-1)	0.987625 (0.26538) [3.72160]	-1.64E-09 (1.4E-09) [-1.19471]	-2.97E-09 (2.4E-09) [-1.23285]	1.777538 (1.26745) [1.40246]	117.7638 (505.940) [0.23276]
MANOT(-2)	-0.551032 (0.24690) [-2.23182]	-1.15E-10 (1.3E-09) [-0.08969]	3.50E-09 (2.2E-09) [1.56049]	-3.672427 (1.17919) [-3.11436]	63.71830 (470.711) [0.13537]
TOP(-1)	-47748643 (4.3E+07) [-1.12245]	-0.117178 (0.22047) [-0.53149]	0.071020 (0.38640) [0.18380]	-2.10E+08 (2.0E+08) [-1.03430]	4.84E+10 (8.1E+10) [0.59721]
TOP(-2)	-48052947 (3.5E+07) [-1.37646]	0.013051 (0.18093) [0.07213]	0.041917 (0.31710) [0.13219]	-2.76E+08 (1.7E+08) [-1.65669]	-2.47E+10 (6.7E+10) [-0.37170]
EXR(-1)	28470587 (2.7E+07) [1.05622]	0.181409 (0.13970) [1.29855]	0.730893 (0.24484) [2.98518]	4.32E+08 (1.3E+08) [3.35212]	-2.27E+10 (5.1E+10) [-0.44198]
EXR(-2)	-17467775 (2.9E+07) [-0.60680]	-0.252587 (0.14919) [-1.69302]	-0.003849 (0.26148) [-0.01472]	-5.24E+08 (1.4E+08) [-3.80900]	6.95E+10 (5.5E+10) [1.26716]
GFCF(-1)	0.107043 (0.04570) [2.34234]	-2.57E-12 (2.4E-10) [-0.01084]	-8.80E-10 (4.2E-10) [-2.11989]	0.930895 (0.21826) [4.26507]	162.1407 (87.1253) [1.86101]
GFCF(-2)	0.014292 (0.04409) [0.32415]	-1.88E-10 (2.3E-10) [-0.82411]	7.38E-10 (4.0E-10) [1.84256]	-0.188654 (0.21059) [-0.89584]	-133.2813 (84.0628) [-1.58550]
GDP(-1)	0.000155 (0.00012) [1.28456]	4.81E-13 (6.2E-13) [0.77033]	-1.86E-12 (1.1E-12) [-1.70089]	0.001001 (0.00058) [1.73795]	1.230404 (0.22983) [5.35356]

GDP(-2)	-3.46E-05 (0.00015)	6.84E-13 (7.6E-13)	3.08E-12 (1.3E-12)	0.000313 (0.00070)	-0.482827 (0.27882)
	[-0.23687]	[0.90188]	[2.32142]	[0.44772]	[-1.73170]
C	5.33E+09 (2.2E+09)	33.12870 (11.4012)	-13.14814 (19.9819)	5.05E+09 (1.1E+10)	2.65E+12 (4.2E+12)
	[2.42323]	[2.90571]	[-0.65800]	[0.48045]	[0.63213]
R-squared	0.993210	0.689387	0.986066	0.971116	0.991889
Adj. R-squared	0.989815	0.534081	0.979099	0.956674	0.987834
Sum sq. resids	3.13E+19	840.4282	2581.492	7.14E+20	1.14E+26
S.E. equation	1.25E+09	6.482392	11.36110	5.97E+09	2.38E+12
F-statistic	292.5630	4.438884	141.5329	67.24241	244.5904

Source: Author's Analysis 2022

Note, the lag selection criterion was based on the Schwarz information criterion (SIC) and it gave 2 lag periods for each of the equations. This shows that there are two maximum years prior to the current year and the forecast for the current stems from the past two years' coefficients of the variables.

DETERMINATION OF MODEL FITNESS

The adjusted R-squared is more appropriately used to determine the robustness of each of the VAR models. This is summarized below:

Table 7: Summary of R-squared Adjusted

Equations	Adjusted R-squared		Conclusion
MANOT	0.993210	99%	High explanatory coefficient
TOP	0.689387	70%	Moderate explanatory coefficient
EXR	0.986066	99%	High explanatory coefficient
GFCF	0.971116	97%	High explanatory coefficient
GDP	0.991889	99%	High explanatory coefficient

Source: Author's Analysis 2022

The R-squared adjusted summarized in the table above shows that the explanatory variables in the manufacturing output, Exchange rate, Gross Fixed Capital Formation and GDP equations have high explanatory coefficients thus meaning that they account for

very high changes in the economy. On the other hand, trade openness has moderate adjusted R-squared meaning that their explanatory variables accounted for moderate changes in the variable.

VARIANCE DECOMPOSITION TEST

Table 8: Variance Decomposition of Manufacturing Output

Period	S.E.	MANOT	TOP	EXR	GFCF	GDP
1	1.25E+09	100.0000	0.000000	0.000000	0.000000	0.000000
2	2.06E+09	92.99752	2.331061	0.038644	2.237552	2.395228
3	2.75E+09	78.38167	7.122821	0.389478	6.260587	7.845448
4	3.33E+09	63.38660	10.71941	1.130798	8.146148	16.61705
5	3.91E+09	49.88450	12.37302	1.548615	7.509819	28.68404
6	4.54E+09	38.96468	11.75669	1.648362	5.841018	41.78925
7	5.22E+09	30.96173	10.11937	1.883584	4.424771	52.61054
8	5.86E+09	25.38781	8.595490	2.576685	3.662420	59.77759
9	6.39E+09	21.55655	7.468655	3.725143	3.505575	63.74408
10	6.79E+09	19.10111	6.663101	5.185349	3.792032	65.25841

Source: Author's Analysis 2022

Table 9: Variance Decomposition of Trade Openness

Period	S.E.	MANOT	TOP	EXR	GFCF	GDP
1	6.482392	5.506840	94.49316	0.000000	0.000000	0.000000
2	7.380756	16.49717	73.18267	8.184966	0.330292	1.804906
3	8.331608	23.37042	57.93435	6.449035	8.445126	3.801061
4	8.862987	20.76631	52.60606	8.484508	11.74849	6.394629
5	9.175454	20.96980	52.54470	7.985821	12.09160	6.408078
6	9.429989	19.87770	50.34020	10.58895	11.82838	7.364774
7	9.947154	21.32322	45.26836	10.45251	10.96043	11.99548
8	10.52529	22.28720	40.84837	9.359871	9.888613	17.61595
9	11.02148	21.14975	38.44331	8.592637	9.021011	22.79329
10	11.41483	19.87482	36.50695	8.010849	8.470773	27.13660

Source: Author's Analysis 2022

Table 10: Variance Decomposition of Exchange Rate

Period	S.E.	MANOT	TOP	EXR	GFCF	GDP
1	11.36110	20.85133	3.885698	75.26297	0.000000	0.000000
2	18.86268	42.05746	3.622828	49.02505	1.156354	4.138301
3	22.83009	49.09086	4.519943	36.94161	3.757597	5.689989
4	24.28255	46.13268	9.092998	33.07121	5.570771	6.132346
5	25.12450	43.43974	12.32450	32.28991	5.796265	6.149576
6	25.78647	42.53034	12.34589	33.56755	5.548853	6.007367
7	26.20083	42.32761	11.98894	34.44527	5.403941	5.834239
8	26.78255	42.27475	11.72604	33.92903	5.423997	6.646183
9	28.03496	41.37165	11.09783	32.05918	5.387349	10.08399
10	30.10063	38.65855	10.36297	29.30482	4.968181	16.70547

Source: Author's Analysis 2022

Table 11: Variance Decomposition of GFCF

Period	S.E.	MANOT	TOP	EXR	GFCF	GDP
1	5.97E+09	23.05248	0.756818	28.53263	47.65807	0.000000
2	8.10E+09	30.96320	1.885553	21.24074	39.43479	6.475707
3	9.64E+09	23.39359	11.31660	15.96058	29.17683	20.15240
4	1.22E+10	16.95046	12.69249	11.58124	18.24494	40.53087
5	1.52E+10	17.48930	8.947910	7.730045	11.70841	54.12434
6	1.77E+10	16.81905	7.267499	6.684258	8.705812	60.52338
7	1.93E+10	14.32254	7.071395	7.458862	7.553622	63.59358
8	2.03E+10	13.18127	6.713787	7.675814	7.495283	64.93384
9	2.10E+10	12.95786	6.328421	8.059837	7.923507	64.73038
10	2.15E+10	13.26307	6.435613	9.209737	8.510004	62.58157

Source: Author's Analysis 2022

Table 12: Variance Decomposition of GDP

Period	S.E.	MANOT	TOP	EXR	GFCF	GDP
1	2.38E+12	4.456485	0.354667	7.552035	12.98744	74.64937
2	3.73E+12	13.53856	0.145291	3.120851	6.401962	76.79334
3	4.95E+12	17.76689	0.171232	6.667475	3.646509	71.74789
4	5.79E+12	14.50230	0.814593	13.39249	2.764821	68.52580
5	6.37E+12	12.01232	1.508159	15.98547	2.687823	67.80623
6	6.81E+12	10.55974	1.363410	16.76213	2.913528	68.40119
7	7.22E+12	9.386713	1.296196	18.39003	3.147084	67.77998
8	7.61E+12	8.466005	1.264230	21.01656	3.479072	65.77413

9	7.93E+12	7.860387	1.219377	23.19777	3.913602	63.80887
10	8.20E+12	7.388919	1.238536	24.78463	4.248640	62.33927

Source: Author's Analysis 2022

It was revealed that the variations in the Manufacturing Output to itself is 100% in the 1st quarter, but reduces in the 5th and 10th period to 49% and 19% respectively. Trade Openness was in the 1st period captures about 95% changes to Manufacturing Output; 53% in the 5th period and 37% in the 10th period. Exchange Rate in the 1st period accounts for 75% changes in the Manufacturing Output of the country, in the 5th and 10th period, an increase in variations captured by the variable

is 32% and 29% respectively. In the 1st period of the variations in the Manufacturing Output through GFCF, 48% was accounted for, while in the 5th and 10th period the percentage of variations falls heavily to 12% and 9% respectively. The contribution of the GDP to Manufacturing Output in the country was observed to be moderate. In the 1st period, 75% of the variations in the GDP was captured, while in the 5th and 10th period, 68% and 62% was captured

RESTATEMENT OF RESEARCH HYPOTHESES

Table 13: Summary of the Hypotheses Test

Variables	F-statistic	F-table	Decision Rule
TOP	4.438884	2.69	Significant
EXR	141.5329	2.69	Significant
GFCF	67.24241	2.69	Significant
GDP	244.5904	2.69	Significant
$F\text{-table} = F_{0.05,4,31} = 2.69$			

Source: Author's Analysis 2022

The F-statistic values for TOP, EXR, GFCF and GDP are greater than the theoretical F-table value at 5% level of significance. Thus, we reject their null hypotheses. Consequently, we conclude as follows: Trade liberalization dynamics has a significant impact on manufacturing output in Nigeria. Exchange rate dynamics has a significant impact on manufacturing output in Nigeria. Gross Fixed Capital Formation dynamics has a significant impact on manufacturing output in Nigeria. From the final hypothesis, we conclude that Economic growth dynamics has a significant impact on manufacturing output in Nigeria.

DISCUSSION OF FINDINGS

This study seeks to examine dynamics of trade liberalization on manufacturing output in Nigeria for a 33 year period, via; (1986-2018), the findings from this research are as follows; Using the VAR model, to conduct the dynamics of the data, it was deduced that Trade liberalization dynamics has a significant impact on manufacturing output in Nigeria using F-stat, however, this dynamics of Trade openness to manufacturing output in the first period was

negative while at the second period was also negative this implies that changes in trade openness affects manufacturing output movement negatively in the first and second period at about -1.64E-09 and -1.15E-10. This in reality shows that, trade openness affects the manufacturing sector negatively, that is when more of goods that can be produced locally are being imported into the country, it affects the industries in the home country. Furthermore, Exchange rate dynamics has a significant impact on manufacturing output in Nigeria. Exchange rate to manufacturing output in the first period is negative while at the second period was positive, this implies that changes in Exchange rate affects manufacturing output movement negatively in the first period at about -2.97E-09 and positively at about 3.50E-09. The above result may be link to late 80's and 90's when Nigeria exchange rate was moderately adequate in respect to manufacturing output and its negativity is the dwindling of the currency to dollar. The third findings show that, Gross Fixed Capital Formation dynamics has a significant impact on manufacturing output in Nigeria. Gross Fixed Capital Formation to manufacturing output in

the first period was positive while at the second period is negative, this implies that changes in Gross Fixed Capital Formation affects manufacturing output movement positively in the first period at about 1.777538 and negatively at about -3.672427. This also buttress the availability of capital in the late 80's and 90's, and this period, the investment climate of the country was favorable compared to early 2000's, 2015, 2016, 2017, 2018, when access to capital and foreign direct investment continues to fall. In conclusion, the result demonstrated that, Economic growth dynamics has a significant impact on manufacturing output in Nigeria. Gross Domestic Product to manufacturing output in the first period was positive while at the second period was also positive. This implies that changes in Gross Domestic Product affects manufacturing output movement positively in the first and second period at about 117.7638 and negatively at about 63.71830. This result conforms to Nigeria economic growth being the first in Africa during President Good luck Jonathan Regime, between, 2013, 2014, 2015. However, all the findings conform to apriority, expectations.

CONCLUSION

The study examined the dynamics of trade liberalization on manufacturing output in Nigeria, from (1986-2018). Time series data from CBN statistical bulletin (2018) and World Bank Development Indicator was employed. Manufacturing output was used as the dependent variable while trade openness, GDP, GFCF, and exchange rate form the independent variable. However, the result revealed that Trade openness (TOP) possesses a negative and significant relationship with manufacturing output (MANOUT) in Nigeria. The result also shows that, exchange rate, has significant and negative impact on manufacturing output; even though it was positive in the long run. Furthermore, Gross Fixed Capital Formation and Economic have significant impact on manufacturing output in Nigeria.

RECOMMENDATIONS

1. The focus of government industrial policy should be to encourage trade openness.
2. The exchange rate of the economy should be strengthened and made more stable.

3. The growth induced policies should be emanated, as that will go a long way to improve and increase the output of the manufacturing sector in Nigeria.

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