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Original Research Article

Trade Policy and Manufacturing Sub-Sector Output in Nigeria (1986-2020)

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Abstract: The objective of the research was to determine the relationship between trade policy and the output of the manufacturing sector. Three hypotheses were formulated. The study adopted ordinary least squares econometric approach on the time series data from 1986 to 2020 to generate the estimates of the models to test the hypotheses at 5% level of significance. The research concluded that there is a positive relationship between manufacturing sector output the and trade liberalization while there is a negative relationship between trade protectionism and manufacturing sector output in Nigeria for the period under review. It was therefore concluded that, since the manufacturing sector is the driver of economic growth in any economy, protection as good as it is may not positively impact the manufacturing sector if other stimulating policies are not adopted simultaneously. Liberalized trade policy should be maintained in manufacturing subsectors that utilize imported manufacturing input alongside other incentivizing policies.

Keywords: Trade Policy, Manufacturing sector output, trade protectionism, Trade Openness, Exchange rate, Import penetration.

SECTION ONE

1. BACKGROUND TO THE STUDY

Trade policy of a country is a crucial determining factor for the improvement of a nation's industrialization. The development experienced by an economy brings forth fluctuations in the structure of trade based on comparative advantage and resource endowments (Hulton, 1967). The post-independence era in Nigeria witnessed several programmes, which were put in place to resuscitate the economy of the nation through a set of pro free trade reforms. One of these reforms is liberalizing trade for improving growth. However, the deliberations over the linkage between growth and trade liberalization went on for years. A key aspect of that debate was the imperative need for the growing economy to strive in order to catch up quickly with the best-of-the best in a competitive world.

With the efforts at negotiating bilateral connections with other countries, the Nigerian trade situation has over the last decades, received a great stimulus. The relationship between trade openness and manufacturing productivity growth is a highly debated topic in the growth and development literature, yet this issue is far from being resolved.

Years down the line, the goals of liberalization have not seemed to have come to fruition as Nigeria has become an import dependent nation than ever. In recent past, there has been a decline in the performance of Gross Domestic Product (GDP) as it pertains to manufacturing sector. In 2004, manufacturing output declined by 1.5% while its contribution to GDP was less than 8% for the period of 2010 to 2013 and as a result various policies were made such as National Economic Empowerment and Development strategy (NEEDS,

2004), the Seven-Point Agenda and the Transformation Agenda, all geared towards ensuring economic growth and poverty minimization through entrepreneurial development, employment and wealth creation.

The Mohamadu Buhari civilian administration adopted a conservative approach, protectionism. This was an attempt to tap into the development benefits of a protectionist economic policy including discouragement of foreign domination of the local economy and boosting the domestic economy by protecting infant industries against foreign competition. Under this regime, the real GDP growth in manufacturing was recorded at 2.35% in the fourth quarter of 2018, which is higher than 0.4% recorded in the same quarter of 2017 and 1.92% recorded in preceding quarter. On a quarter-on-basis, the sector growth rate stood at 5.46%, while the annual growth rate was 2.09% in 2018.The yearly growth rate was a significant improvement over the previous years' growth rate of -0.21% (Femi, 2019).

However, Ebenyi, Nwanosike *et al.,* (2017) reveal that the Nigerian economy has not changed its export structure. The only changes that have taken place to its exports were just a mere shift in exported product indicating a sign of export substitution from primary agro industry-based exports to primary mining industry-based exports (i.e. crude oil).

The focus of this study therefore, is to examine the performance of the manufacturing sector output with respect to the different trade policy regimes in Nigeria.

1.1 Statement of Problem

The traditional views that trade liberalization is necessary and has positive effects on development and on the growth, performance of the industrial and manufacturing subsector has increasingly become arguable. According to Adenikinju and Olofin (2000), trade policy can affect industrial growth in several ways. First, a less protectionist trade regime increases scale efficiency by expanding the domestic market which otherwise might be too small for the efficient production of goods that show increasing returns to scale. Second, a more liberal trade regime leads to increased competition from abroad, forcing domestic firms to adopt newer, more efficient technology to reduce inefficiency and waste. Third, it is argued that a freer economy eases foreign exchange constraints faced by most developing countries and hence enables a country to import needed raw materials and capital goods. Finally, a more open economy results in a faster rate of technological progress.

Despite the implementation of trade liberalization measures, some macroeconomic indicators show a poor performance of the economy generally (Gbosi, 2007); lack of integration of macro-economic plans and the absence of harmonization and coordination of fiscal policy (Onoh, 2007); inappropriate and inefficient policy (Anyanwu, 2007); lack of economic potentials for rapid economic growth and development (Ogbole, 2010). A closer look buttresses the fact that manufacturing sub-sector of the economy is performing below expectation. The ideology of controlled trade embodied a regime of regulation that has both direct and main goal of control regime is to achieve efficiency, stability and firmness in the face of market failure, as the condition for competitive equilibrium is not satisfied, Olomola (1995). The situation however with Nigeria over the last decades, is that foreign trade and the cross-border movement of technology, labour and capital has been massive. In recent years, the negative effect which the capital market of the advanced capitalist economies exerts on the developing countries has given rise to counter opinion which supports the negative aspects of openness and questions are being asked as to whether developing countries actually share in its benefits. Between 1985 and 2003, the real exchange rate of the Naira depreciated by more than 95% thereby further worsening the terms of trade. The food export-import gap, which had reduced in the early part of 1980s, has since been widened.

With the outbreak of the corona virus pandemic in 2019-2020, which is still sweeping, the manufacturing sector of the Nigerian economy has not made any difference even under regulated trade regime. ProShare Intelligent Investment (2020) cites that the disruption of the global supply chain has negatively affected the manufacturing sector in Nigeria. The manufacturing sector recorded slow growth in Q1 2020. It grew by 0.43%, lower than Q1 2019 growth rate of 0.81% and Q4 2019 growth rate of 0.43%. Many manufacturers and service providers in the country are already experiencing an acute shortage of raw materials and intermediate inputs.

This study therefore, is designed to investigate the performance of the manufacturing sector subject to the trade policy regimes.

1.2 Objectives of the Study

The aim of this study is to examine trade policy and manufacturing sub sector output in Nigeria (1986-2020). To be specific, the objective of the study will include:

i. To ascertain the relationship between protectionism and manufacturing sector output in Nigeria

ii. To examine the relationship between liberalism and manufacturing sector output in Nigeria
iii. To examine the relationship between exchange rate and manufacturing sector output in Nigeria
iv. To determine the effect of protectionism and liberalism on the manufacturing sector output in Nigeria

1.3 Research Hypotheses

The following hypotheses are formulated for the purpose of this research:

i. **H_{01}:** There is no significant relationship between Protectionism and manufacturing sector output in Nigeria.
ii. **H_{02}:** There is no significant relationship between Liberalism and the manufacturing sector in Nigeria.
iii. **H_{03}:** There is no significant relationship between exchange rate and manufacturing sector output in Nigeria.

1.4 Significance of the Study

This study when completed will add to the existing literatures on this area of study. Beyond that, it will immensely contribute in assisting the government, economic planners, researchers, policy makers and the academia in understanding the policy implication of trade policy on the manufacturing subsector. To the government, it will provide a better understanding on the best policy to embark on and the appropriate way to implement it, in order to ensure consistent improvement on the growth level of the manufacturing industry. To the general public, economic planners, policy makers and even manufacturing sector regulatory authorities, it will provide a wide range of knowledge on the impact of government policies on manufacturing industries in Nigeria and of great importance to other researchers who will in the future depend on these contributions for further research.

1.5 Scope of the Study

This research work covers the effect of protectionist trade policies and trade liberalization on the manufacturing sector. The main variables in this study are manufacturing sector output (dependent variable), trade protectionism, Trade Openness, Exchange rate, Import penetration as explanatory variables. The manufacturing sector output is the aggregate output of all the manufacturing subsectors. The study covers a period of 1986 to 2020.

1.6 Organization of the Study

The rest of the study is organized as follows; chapter two is the literature review. Chapter three is the methodology of the study which includes the research design and analytical techniques. Chapter four focuses on the data presentation and analysis. Chapter five is the summary, conclusion and recommendation aspect of the work

SECTION TWO

2. REVIEW OF RELATED LITERATURE

This chapter reviewed relevant theoretical and empirical literature of the association between trade policy and the manufacturing sector output in Nigeria.

2.1. Theoretical Framework

2.1.1 Keynesian School of Thought

This school of thought practiced Keynesian economics and was developed during and after the Great Depression (1929-1939) from the ideas given by John Maynard Keynes. Keynes (1936), during the Great Depression, observed that unemployment rose to 25% in the United States and high as 33% for other countries. Keynesian economists argued generally that, as long as aggregate demand is volatile and unstable, a market economy often experiences inefficient macroeconomic results in the form of economic recession (when demand is low) and inflation (when demand is high). That these can be curbed by government involvement, such as monetary policies by the apex bank and fiscal policy actions by the government, which aids in the control of output over the business circle. Keynesian economists advocated an active role for government intervention predominantly on the private sector. Keynes argued that the combination of reduced interest rate (monetary policy) and government investment in infrastructure (fiscal policy) would serve as solution to the Great Depression, hereby stimulating aggregate demand and supply. If the interest rate at which consumers and business borrow decreases, the previously uneconomic investments becomes profitable, this will lead to large consumer sales financed through debt (such as house, automobile and appliances like refrigerators) to be more affordable.

Government participation in the regulation of an economy in the external sector is called protectionism. Like expansionary and contractionary fiscal and monetary policies, the government also stimulates the domestic economy in similar approach through the external sector linkage. When the government aims to open the economy (liberalized trade policy), export duties are cancelled, import licensing for many imports are abolished, and so on. When there is a need to regulate the sector, the processes are reversed.

2.1.2 Theory of Production

Production refers to the process by which inputs are transformed into outputs. In economics, inputs may generally be considered to include labour, capital, and intermediate inputs. Firms make choices on various combinations of these inputs to produce outputs conditional on their technical production possibilities (Jehle & Reny, 2011). The quantity produced by a firm as well as how it may be produced is based on the production technology. The production technology specifies the feasible set of outputs that are obtainable with a given choice of inputs. Usually, the production function is used when describing the production technology. Assuming the case of a firm producing a single product from many inputs, the production function is specified by:

$Y = f(X)$ …….. (2.1)

Where Y represents the output of a particular product in a given period, and $X = (X_1, X_{2,} \ldots \ldots X_N)$ is an N x 1 vector of inputs. The production function defines the maximum amount of output that can be produced with a given set of inputs, while holding technology constant at some predetermined state. Therefore, at the given state of technology the level of output can only be varied by changing the amounts of one or all inputs.

Brown and De-cani (1962) elucidated that the productivity of a single factor and/or the productivity relating to all factors can be assessed from the production function. The single factor productivity is often in terms of partial productivity indices of factors including labour, capital, and intermediate materials input indices. In literature, there are two concepts of single factor productivity that can be derived from the production function; marginal productivity and average productivity (Besanko & Braeutigam, 2010). The marginal productivity measure refers to the change in output resulting from an addition of one unit in the use of an input. It therefore represents the slope or rate of change in the production function as a result of an incremental change in the usage of a particular input while holding other inputs constant (Debertin, 2012).

In practice, amongst the single factor productivity analysis, the simple ratio of output to factor inputs (average) is a prevalent indicator to measure productivity at the industry level. These ratios show the amount of output attributable to a unit of labour, capital and intermediate materials and if they rise, then the productivity of that factor (labour, capital or intermediate material) has increased. The inverse of these productivity ratios indicates for a firm the units of the factor used in producing one unit of its output. Increase in any of the partial productivity ratios implies high productivity, meaning that a large amount of output is produced with less of a particular input.

Most often, partial productivity for firms relate to output secured for a given amount of labour. In this case, productivity also denoted to as output-labour ratio, refers to physical volume of output attained per worker or per man-hour. Changes in output-labour ratio represent changes in the efficiency of labour as a factor input. The output-labour ratio would be influenced by among other factors, the skill of the work force, capital-labour substitution, and technical improvements.

Technological conditions may however change over time, an occurrence known as technological progress, and the production function may then shift. In this case, either greater output can be obtained with the same input set or the same output can be obtained with lesser inputs. This is the phenomenon in Nigeria where production technology into the manufacturing sector is widely import dependent. Every change in the economy of the foreign economy affects the manufacturing sector performance.

2.1.3 The New Trade Theory

Development of the New Trade Theory followed the findings from studies of Balassa (1967), and Grubel and Lloyd (1975) where contrary to the tenets of the traditional. trade theories it was established that, intra-industry trade took place. Besides, a large portion of the intra-industry trade occurred with few costs of adjustment. Therefore, the new trade theory emerged in an attempt to describe why intra-industry trade is possible. The first contribution was that from Krugman (1979), in which it was argued that trade could occur within imperfect markets, and that trade results from economies of scale instead of differences in technology or factor endowments, and product differentiation. Increasing returns to scale makes it possible for firms to lower their average costs as they increase production, and product differentiation allows firms to produce and export their unique variety to other countries. Thus, trade can occur even if economies have similar tastes, technology, and factor endowments, and improve the productivity of firms. Accordingly, measures aimed at liberalizing trade will not only ensure that individuals are offered a wider range of choice thereby increasing the competition among firms, but also result in mutual growth in productivity of firms in the different economies.

Later development of the new trade theory incorporated firm heterogeneity in addition to the assumptions of economies of scale, differentiated products, and imperfect competition. A notable

contribution in this regard is Melitz (2003). In the analysis, international trade was considered a mechanism for reallocations between firms in an industry. The reduction or elimination of barriers to international trade would lead to the reallocation of market share in the direction of more productive firms from less productive ones whereas firms with the least productivity will exit the market. This process would result in increases to average industry productivity, alongside growth in the market share of the most productive firms. In addition to improvement in productivity, Melitz (2003) suggested that higher productive firms self-select into export markets. This view by Melitz (2003) was adopted in the present study in order to provide guidance in addressing the concern; whether trade liberalization leads to increases in productivity of firms operating in the manufacturing industry of Nigeria.

2.3 Empirical Review

Obi and Abina (2009) conducted an empirical investigation on protectionism and the development of an emerging economy during the period 1981-2015 employing official macroeonomic data from Nigeria. The study used time series data on Human Development Index, Trade Openness, Real Exchange Rate and Employment Rate. Data for the study were sourced from the Federal Ministry of Finance, Federal Ministry of Commerce, Trade and Industries, Office of the Accountant-General of the Federation (OAGF), CBN Statistical Bulletin 2016 and National Bureau of Statistics (NBS). The study employed Phillips-Perron unit root test (to avoid spurious estimates) and autoregressive distributed lag test. The results of the descriptive statistics showed that all the explanatory variables were leptokurtic in nature. Also, the results revealed the order of stationarity which was at order one level: 1(1) while further steps were taken to carry out ARDL Test. The study discovered that real exchange rate has a negative but significant relationship with Human development index. Protectionism, used for creating an enabling environment for indigenous infant industries rather than as a competitive stifling tool, has the potential to boost domestic production and reduce overdependence on importation of consumer goods. It therefore recommends that if domestic production can be improved upon, there is hope of using import restriction to serve as a tool for protecting the indigenous industry against foreign competition. In this process, the country will charge higher import tariffs. These tariffs will cushion the activity of the foreign country and help the national country gain more grounds in her domestic market. The resultant effect at least in the short–run, other things being equal, will be the economic development of Nigeria as an emerging economy.

Udo (2014) explored the industrial policies and the performance of industrial sector using descriptive study. He stated that the policies, identified as ISI, EPI and FPII, did not help Nigeria to attain the required level of industrialization that can produce dynamic change in the economic structure of the country and the performance of industrial sector especially manufacturing had been below expectation. The policies have a common feature of foreign inputs reliance which makes their successful implementation in Nigeria very costly. Based on the above, the prospects for Nigeria's industrialization are discussed. Among the recommendations are proper conception and implementation of industrial policy, human capital development especially sciences and technical education for skill development, acquisition of relevant technology in the world, massive public investment in the provision of roads, rail system and electricity, and completion or rehabilitation of industrial core projects especially iron and steel projects. "Home Grow Industrial Policy" where ISI and EPI are jointly pursued and industrial inputs domestically sourced was recommended alongside acquisition of technology being a national issue rather than local firm affair.

Nyor (2014) looked at the importance of industrial policy to development and assessed the impacts of industrial policies on the manufacturing sector considering how it has a reflection on GDP and development of the country. The work being exploratory in nature fashioned a methodology in a way that data collections were basically from secondary sources after which it was used to analyse base on the level of poverty and GDP in Nigeria. He stated MAN's (2006) identification of problems confronting the sector among others to include: Poor power (Electricity) supply; dilapidated infrastructure; lack of access to corporate finance, policy inconsistency; multiple taxation; corruption; lack of adequate take off incentives for new business; and general poverty in the land which places serious strain on the manufacturing firms. He examined the impacts of industrial policies on manufacturing sector. The analysis was based on the contribution of the manufacturing sector to GDP of the country and the level of poverty in Nigeria looking at the strategic importance of the manufacturing sector to economic development. Two issues were noted which formed the adoption of two theories. These issues were based on the philosophy of the policies. One of positions looked at industrial policy as important because it enables the state to protect the industry against obnoxious actions of other countries and their industries through policy and incentives especially in the developing economies like Nigeria. The other notion holds that rational, self-interested actors competing freely in the marketplace will produce the greatest good and this government intervene in the

market through policies rather, state should only do what the market cannot do by itself: "namely, to determine, arbitrate and enforce the rules of the game. The mercantilism and liberalism formed the basis of all the industrial policies in Nigeria. Some of the recommendations made were that government should improve the quality of infrastructures in the country and there should be encouragement of the use local inputs and their availability be encouraged to aid local production.

Falade *et al.,* (2015) investigated the relationship between government expenditure and manufacturing sector output in Nigeria. Government expenditure was disaggregated into capital and recurrent with a view to analyse the relative effect of these categories of government expenditure with emphasis on the capital component. The study employed time series data from 1970 to 2013. Data on manufacturing sector output, capital and recurrent expenditure, nominal and real Gross Domestic Product (GDP), exchange rate and interest rate were collected from Statistical Bulletin and Annual Report and Statement of Accounts published by the Central Bank of Nigeria (CBN). Econometric evidence revealed stationarity of the variables of interest at their first difference while the Johansen cointegration approach also confirms the existence of one cointegrating relationship at 5 percent level of significance. In addition, error correction estimates revealed that while government capital expenditure has positive relationship with manufacturing sector output in Nigeria, recurrent expenditure exerts negative effect on manufacturing sector output. The results showed that one per cent increase in government capital expenditure resulted in an increase of 11.2 per cent in manufacturing sector output while recurrent expenditure decreased it by 26.9 per cent. This revealed that government capital expenditure has positive impact on manufacturing sector output. The study therefore suggested that larger percentage of government expenditure in the annual budget should be on capital component coupled with improved implementation of expenditure policies rather than recurrent expenditure which does not really have a significant impact on the manufacturing sector.

Okere and Iheanacho (2016) examine the indirect impact of trade protectionist policy on economic growth in Nigeria by applying the bounds testing (ARDL) approach to cointegration over the period 1990 to 2013. Three measures of trade protectionist are used including real exchange rate, subsidy, trade openness and the indirect effect on economic growth was captured through unemployment and industrial production. The bound tests suggest that the variables of interest are bound together in the long run when unemployment and industrial production are the dependent variables. The associated equilibrium correction are also corrected and significant, confirming the existence of a long-run relationship. There is no evidence of long-run causal relationship between real GDP per capita, unemployment, labour and industrial production. There is evidence of short-run unidirectional causal relationship running from unemployment, industrial production to GDP per capita. There is unidirectional causal relationship running from GDP per capita and industrial to labour. Even though there is a general belief that trade protectionist policy is detrimental to growth, our empirical result fail to confirm this. However, we our finding reveals an indirect link between protectionist policy and economic growth through industrial production and the unemployment rate. The results found for Nigeria can be generalized and compared to other developing countries which share a common experience in managing the international exchanges of goods and services between national and regional economies.

Okpa (2018) examined the effects of government policies on the manufacturing sector in Nigeria. The study used stationarity test such as the Augmented Dickey-Fuller (ADF) test and Johanson cointegration test. The ADF test shows that the variables are stationary at first difference while the Johanson cointegration test shows that all the independent variables exhibit a long-run equilibrium relationship with the manufacturing sector output. The result from the fiscal side shows that recurrent expenditure, subsidy and petroleum profit tax have a negative and significant effect on manufacturing output while capital expenditure has a significant and positive effect on the manufacturing output. From the monetary side credit to the manufacturing sector, commercial bank lending rate have a negative but significant effect on the manufacturing output while exchange rate and money supply have a positive and significant effect on the manufacturing sector output in Nigeria. The study, therefore, recommends that there should be a synergy between government expenditure and money supply so that the ow of money supply would impact directly on capital expenditure in the area of provision of infrastructure and help to create an enabling environment for the interaction of monetary and fiscal policies to achieve the objective of economic growth.

Ashamu *et al.,* (2014) investigated the impact of international trade on Nigerian Manufacturing sector growth (MSGR). It employed cointegration and error- correction modeling techniques to explore the long-run dynamic relationship between some proxies of international trade on one hand, and Nigeria's manufacturing sector growth on the other. The study explained that there is a long-run relationship between the two.

Again, the findings showed that despite the positive relationship between, exports, imports and the Nigerian manufacturing sector's growth, both exports and imports do not have significant impact on the Nigerian manufacturing sector's growth. In all, trade had a weak explanatory power of just 40% of the total variation in the MSGR. The findings further revealed that Nigeria's manufacturing sector has not been benefiting from trade liberalization as the coefficient of trade openness is negative. The causality test confirmed the weak influence of the Nigerian manufacturing sector on the major macroeconomic variables. The policy recommendation was that both export promotion and import substitution policies of the government be made more vibrant in terms of implementation while making the country more investment friendly. They equally stated that efforts be made to make the production environment in Nigeria friendlier by ensuring security of life and properties as well as improving power generation, roads and other infrastructural facilities. This, they say will limit the alarming exit of manufacturing firms from the country.

Eze *et al.,* (2013) used an ex-post facto design (quantitative research design) to examine the impact of fiscal policy on the manufacturing sector output in Nigeria. Empirical evidence from the developed and developing economies has shown that fiscal and monetary policies have the capacity to influence the entire economy if it is well managed. The results of the study indicated that government expenditure significantly affect manufacturing sector output based on the magnitude and the level of significance of the coefficient and p-value and there is a long-run relationship between fiscal policy and manufacturing sector output. The implication of this finding is that if government did not increase public expenditure and its implementation, Nigerian manufacturing sector output will not generate a corresponding increase in the growth of Nigerian economy. They recommended that the expansionary fiscal policies should be encouraged as they play vital role for the growth of the manufacturing sector output in Nigeria; that fiscal policy should be given more priority attention towards the manufacturing sector by increasing the level of budget implementation, which will enhance aggregate spending in the economy; and consistent government implementation will contribute to the increase performance of manufacturing sector.

2.3 Summary of Literature Reviewed

Obi and Abina (2009) employed three measures of trade protectionist; real exchange rate, subsidy, trade openness and the indirect effect on economic growth was captured through unemployment and industrial production. The bound tests suggest a long run relationship when unemployment and industrial production are the dependent variables. The associated equilibrium corrections are also corrected and significant, confirming the existence of a long-run relationship. There is no evidence of long-run causal relationship between real GDP per capita, unemployment, labour and industrial production. There is evidence of short-run unidirectional causal relationship running from unemployment, industrial production to GDP per capita. There is unidirectional causal relationship running from GDP per capita and industrial to labour. Even though there is a general belief that trade protectionist policy is detrimental to growth, this empirical result failed to confirm this. However, the finding reveals an indirect link between protectionist policy and economic growth through industrial production and the unemployment rate. Okere and Iheanacho (2016) employed Human Development Index, Trade Openness, Real Exchange Rate and Employment Rate. The study discovered that real exchange rate has a negative but significant relationship with Human development index.

2.4 Evaluation of Reviewed Literature

Nigeria as a country has witness different foreign policy regimes. The period under review has experienced liberalized trade policy under the administrations of Presidents Obasanjo and Jonathan respectively. The administration of President Buhari (2015 – 2020) however till date operates a protectionist trade policy.

Obi and Abina ibid. studied protectionism and the development of an emerging economy period 1990 to 2013 examining Human Development Index, Trade Openness, Real Exchange Rate and Employment Rate and employed Phillips-Perron unit root test, descriptive statistics, and autoregressive distributed lag test. Okere and Iheanacho ibid. investigated the indirect impact of trade protectionist policy on economic growth in Nigeria by applying the bounds testing (ARDL) approach to cointegration over the period 1990 to 2013. Three measures of trade protectionist were used including real exchange rate, subsidy, trade openness and the indirect effect on economic growth was captured through unemployment and industrial production.

This study is set up to investigate the effects of protectionism on the performance of the manufacturing sector in relation to food processing, textile, chemical and leather production subsectors for the periods under regulated regime, 2015 to 202020. This is to fill the gap in time and different trade policy administration.

SECTION THREE

3. RESEARCH METHODOLOGY

3.1 Research Design

This study adopts an empirical design to examine the effect of trade policies on the manufacturing sector in Nigeria from 2000 - 2020. This study is an Ex-post facto research design; systematic and empirical investigation in which the researcher does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulated (Akuezuilo, 1990). The ordinary least square (OLS) techniques of estimation was used in estimating the model. This is because of its interesting BLUE (Best Linear Unbiased Estimation) properties and its intrinsic assumption. The OLS estimators have both numerical and statistical properties. Gujarati (1995:56) quoting Davidson and Mekinnor (1993) put the numerical properties as "those properties that hold as a consequence of the use of ordinary least squares, regardless of how the data were generated" similarly, the statistical properties are those that hold under the certain assumptions about the way data were generated. The study models Manufacturing Sector Output (MSO), as a dependent variable on variables of protectionism and trade liberalization. The data used for the study were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin 2020. The statistical program, E-views shows the regression results.

3.2 Model Specification

The model is built on the framework of some established studies. Okere and Iheanacho (2016) assessed the impact of trade protectionist policy on the economic growth of Nigeria using the bounds testing (ARDL) approach to cointegration with trade protectionism modelled exogenously using trade openness, subsidy and real interest rate. Akims (2017) studied trade liberalization and performance of the manufacturing sector in Nigeria and modelled trade liberalization exogenously using import penetration and export penetration. However, this study adopts trade openness and real exchange rate as proxies for trade protectionism while term of trade is used to measure trade liberalization. This shows the nature of the relationship that exists between the variables. The functional form of the model is as expressed below;

MSO= f(DOP, ER) 1
MSO = f(IP, ER) 2
The econometric specifications are as follows;
$MSO = \beta_0 + \beta_1 DOP + \beta_2 ER + \mu 3$
$MSO = \beta_0 + \beta_1 IP + \beta_2 ER + \mu 4$
Where, MSO = Manufacturing Sector Output
DOP = Degree of Openness
IP = Import Penetration
ER = Exchange Rate
β_0 = Constant
$\beta_1, \beta_2, \beta_3$= Parameter estimates
$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0$
U = Error term

3.3 Data Sources

Data used for the study are from secondary sources. They are annual time series data on manufacturing sector output degree of openness, and import penetration. All data used for this study were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin for 1986 - 2020.

3.4 VARIABLES IN THE MODELS

Manufacturing Sector Output (MSO):

This is the aggregate real sector output of the manufacturing sector. It is it is the sectorial contribution of the overall output of the manufacturing sector to the real gross domestic product. The variable of the manufacturing sector output is the dependent variable of the model.

Degree of Openness (DOP):

This measures the degree to which the Nigerian domestic economy interacts with the foreign economy. Under protectionism, the economy is not completely closed, but highly regulated to protect the domestic economy through policy measures. This is calculated by summing import and export and dividing the result by the gross domestic product on yearly bases. Functionally,

$$DOP = \text{Degree of Openness } \frac{\text{(Import + Export)}}{\text{GDP}}$$

Import Penetration (IP):

Import penetration is the extent to which domestic demand is satisfied by imports in a particular sub-sector in a given time. It is the ratio of imports to the gross domestic product (GDP) adjusted to export. This is expected to have a positive relationship with the manufacturing sector output. It is calculated as: D = GDP – (X + M), then M/D, where D = domestic import, X = export, M = import, GDP = gross domestic product.

Exchange Rate (ER):

Exchange rate protectionism implies that a country's exchange rate might be undervalued, causing the country to import less and export more than it would with a stronger exchange rate. Therefore, it is expected to have a positive relationship with manufacturing sector output.

3.5 Analytical Framework

The economic test of significance will utilized for the regression analysis. The sign and magnitude of the parameter estimates will be examined whether they are in conformity with their

appropriate expectation. Theoretically, the relationship between MOS and DOP is expected to be positive (> 0), MOS and IP are expected to be positive (> 0), ER is expected to be positive (> 0).

The overall hypothesis of the equation will be evaluated by the F-statistics (F-stat). The significance of the F-stat shows if the dependent variables are depending on the independent variables significantly or not. In like manner, the significant variable is checked by t-stat and p-values at 5% significance level. The t-stat is used to show if a single independent variable is a significant determinant of the dependent variable The explanatory power of the model is shown by R^2.

SECTION FOUR

4. DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Data Presentation

The Appendix I shows the time series (1986 - 2020) data of the variables that have been used for the formulation of the econometric model in chapter three.

4.2 Data Analysis

4.2.1 Descriptive Statistics

	MSO	ER	DOP	IP
Mean	2989.277	115.1789	88649953	1370220.
Median	1304.070	120.9700	55107499	395946.1
Maximum	12455.53	358.8100	3.38E+08	6235242.
Minimum	38.65000	2.020000	351816.5	-8168416.
Std. Dev.	3500.067	99.79966	88662817	2770357.
Skewness	1.156573	0.758352	1.138500	-0.726503
Kurtosis	3.139010	2.851659	3.747567	5.270354
Sum	104624.7	4031.260	3.10E+09	47957706
Sum Sq. Dev.	4.17E+08	338639.0	2.67E+17	2.61E+14
Observations	35	35	35	35

Source: Eviews 10 Output

From the above, we can draw the following important conclusions about the distribution of the data. The kurtosis shows the skewness or flatness the series. When kurtosis = 3, the distribution is normal (mesokurtic), the values are scattered around the mean. Kurtosis > 3 shows that the distribution has more values higher than the mean of the distribution (leptokurtic). kurtosis < 3, shows that, there are more values below the sample mean (platykurtic). From the results, MSO and ER are normally distributed while DOP and IP are not normally distributed, has more values above their respective sample means. Therefore, the normal curve of DOP and IP are skewed positively (long right tail).

2.2.2 Models Estimation

The result obtained using the Ordinary Least Squares (OLS) multiple regression estimation technique is presented below.

The linear econometric model from chapter three is;

$MSO = \beta_0 + \beta_1 DOP + \beta_2 ER + \mu$

The logarithm transformation of the model was necessary to solve the problem of heteroscedaticity. The resulting model is written below;

$LogMSO = \beta_0 + \beta_1 LogDOP + \beta_2 LogER + \mu$

Table 4.2.1: OLS Model Estimation Results of the MOS Model 1

Dependent Variable: LOG(MSO) **Method: Least Squares** **Date: 08/24/21 Time: 19:56** **Sample (adjusted): 1987 2020** **Included observations: 34 after adjustments**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.324720	0.566392	0.573312	0.5707
LOG(LAGGEDMSO)	0.936129	0.075579	12.38615	0.0000
LOG(DOP)	-0.025651	0.035278	-0.727116	0.4728
LOG(ER)	0.039085	0.044223	0.883816	0.3838
R-squared	0.879600	Mean dependent var		8.279694
Adjusted R-squared	0.867560	S.D. dependent var		0.276475
S.E. of regression	0.100615	Akaike info criterion		-1.644891

Sum squared resid	0.303704	Schwarz criterion	-1.465319
Log likelihood	31.96315	Hannan-Quinn criter.	-1.583652
F-statistic	73.05678	Durbin-Watson stat	1.629866
Prob(F-statistic)	0.000000		

Source: Author's Computation using E-views 10
Significance at 5% level

The estimated linear econometric model is:
logMOS = 0.324720 -0.025651logDOP + 0.039085 logER + μ

4.2.3 Evaluation Based on Economic Criteria
Our parameter estimates are expected to conform to apriori expectation as it was discussed in chapter three.

Table 4.2.3: Evaluation based on Economic Apriori Criteria

Variables	Expected sign	Actual sign
ER	+	+
DOP	+	-

Source: Author's Compilation Using E-views 10
The apriori expectations for DOP was satisfied while that of ER was not.

4.2.2 Evaluation Based on Statistical Criteria
(a) Coefficient of Determination (R^2): Given the **R^2 = 0.879600**, 88% of the changes in the dependent are explained by the variables in the model while 12% is explained other variables that are not in the model.

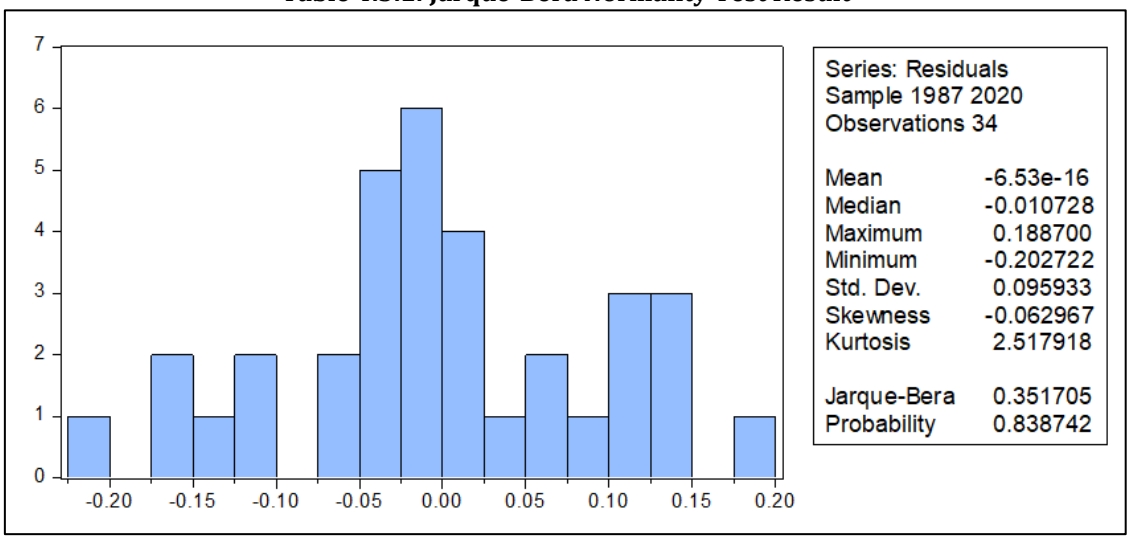
(B) Coefficients
i. **LAGGEDMSO:** The coefficient of the lag of manufacturing sector output is given as 0.936129. This shows a positive relationship between the manufacturing sector output of the current period and previous period. An increase in the MSO of previous period will cause MSO in the current period to increase vice versa.
ii. **Exchange Rate:** The coefficient of ER is 0.039085 implying that ER has a positive relationship with MSO. This means that a unit increase in real exchange rate will cause the MSO to increase by 0.04%.
iii. **Degree of Openness:** The coefficient of DOP is -0.025651 implying that a unit increase in DOP led to 0.03% decrease in MSO in Nigeria for the period under review. This means that there is a negative relationship between DOP and MOS.

(C) Test of Significance
P-Value:
The critical value of probability is 0.05 i.e. 5% level of significance.
i. **LAGGEDMSO:** This statistically significant at 5% given the p-value = 0.0000 < 0.05.
ii. **Exchange Rate:** The p-value of the coefficient of the intercept is 0.3838 > 0.05. We therefore conclude that ER is not statistically significant at 5%.
iii. **Degree of Openness:** The p-value of the coefficient of DOP is 0.4728 > 0.05. We therefore conclude that DOP is statistically not significant at 5% level of significant.

Given the **Prob(F-stat) = 0.000000 < 0.05**, the overall model is significant at 5%.

4.3 Diagnostics Tests Results and Interpretation
4.3.1 Normality Test
Table 4.3.1 below shows the histogram and descriptive statistics of the residual, including the Jarque-Bera statistic for testing normality. The rule of thumb for a normally distributed residual is that (a) the histogram must be bell shaped and (b) Jarque-Bera statistic should not be significant. The result shows that the histogram is bell-shaped and the Jarque-Bera statistic is not significant since the probability statistics of 0.88 is greater than 5%. It is therefore fitting to state that the residual of the error correction model is normally distributed.

Table 4.3.1: Jarque-Bera Normality Test Result



Source: Author's computation using E-views 10

4.3.2 Serial Correlation Test

Given the **DW-stat = 1.629866=** 2 approximately. The introduction of the lag of MSO was to remove the serial correlation that the model exhibited before the introduction of the lag of the dependent variable. We therefore, accept that the model has no serial correlation. This agrees with Breusch-Godfrey Serial Correlation LM Test result below where the probability values of the F-stat and observed R^2 are greater than 0.05.

Table 4.3.2: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.019235	Prob. F(2,28)	0.3739
Obs*R-squared	2.307308	Prob. Chi-Square(2)	0.3155

Source: Eviews 10

4.3.2 Heteroscedasticity Test

Table 4.3.2: Breusch-Pagan-Godfrey Heteroscedasticity test result

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.633939	Prob. F(3,30)	0.2024
Obs*R-squared	4.775160	Prob. Chi-Square(3)	0.1890
Scaled explained SS	2.821571	Prob. Chi-Square(3)	0.4200

Source: Author's computation using E-views 10

The result presented in Tables 4.2.2 shows the F-stat value of 1.633939 and the probability statistics of F-ratio is 0.2024. The rule of thumb is that if the probability statistics is less than 0.05, then there is a problem of heteroscedasticity in the estimated model. Since the probability statistics is greater than 0.05(i.e. 0.2024> 0.05) we conclude that the model is free from the problem of heteroscedasticity. As such, the estimated model can be used for decisions making and policy recommendations.

Table 4.2.3: OLS Model Estimation Results of the MOS Model 2

Dependent Variable: LOG(MSO) **Method: Least Squares** **Date: 08/24/21 Time: 19:35** **Sample (adjusted): 1987 2020** **Included observations: 34 after adjustments**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.386963	0.567796	0.681519	0.5008
LOG(LAGGEDMSO)	0.971445	0.074388	13.05922	0.0000
LOG(IP)	0.019734	0.028301	0.697304	0.4910
LOG(ER)	-0.016528	0.038813	-0.425831	0.6733

R-squared	0.879433	Mean dependent var	8.279694
Adjusted R-squared	0.867376	S.D. dependent var	0.276475
S.E. of regression	0.100685	Akaike info criterion	-1.643499
Sum squared resid	0.304127	Schwarz criterion	-1.463927
Log likelihood	31.93948	Hannan-Quinn criter.	-1.582260
F-statistic	72.94125	Durbin-Watson stat	1.563154
Prob(F-statistic)	0.000000		

Source: Eviews 10 Output

$\log MSO = \beta_0 + \beta_1 \log IP + \beta_2 \log ER + \mu$ 2

$\log MOS = 0.386963 + 0.019734 \log IP - 0.016528 \log DOP + \mu$

Table 4.2.3: Evaluation based on Economic Apriori Criteria

Variables	Expected sign	Actual sign
IP	+	+
ER	+	-

Source: Author's Compilation Using E-views 10

The apriori expectation for IP was satisfied while ER was not.

4.2.2 Evaluation Based on Statistical Criteria

i. **LAGGEDMSO:** The coefficient of the lag of manufacturing sector output is given as 0.971445. This shows a positive relationship between the manufacturing sector output of the current period and previous period. An increase in the MSO of previous period will cause MSO in the current period to increase vice versa.
ii. **Import Penetration (IP):** The coefficient of IP is 0.019734 implying that a unit increase in IP led to 0.019734% rise in MSO. This connotes a positive relationship between MSO and IP.
iii. **Exchange Rate (ER):** The coefficient of ER is -0.016528 showing a negative relationship between ER and MSO. An increase in exchange rate will cause MSO to fall by 0.016528.

(C) Test of Significance

P-Value:

The critical value of probability is 0.05 i.e. 5% level of significance.

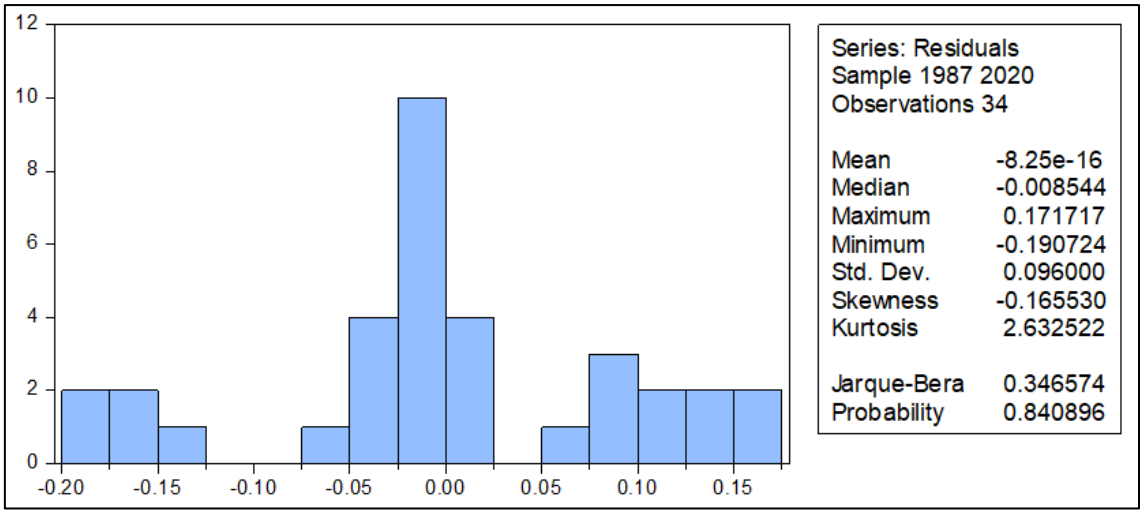
i. **LAGGEDMSO:** This statistically significant at 5% given the p-value = 0.0000 < 0.05.
ii. **Exchange Rate:** The p-value of the coefficient of the intercept is 0.6733 > 0.05. We therefore conclude that ER is not statistically significant at 5%.
iii. **Import Penetration (IP):** The p-value of the coefficient of DOP is 0.4910 > 0.05. We therefore conclude that DOP is statistically not significant at 5% level of significant.

Given the **Prob(F-stat) = 0.000000 < 0.05**, the overall model is significant at 5%.

4.3.3 Diagnostics Tests Results and Interpretation

4.3.1 Normality Test

Table 4.3.1 below shows the histogram and descriptive statistics of the residual, including the Jarque-Bera statistic for testing normality. The rule of thumb for a normally distributed residual is that (a) the histogram must be bell shaped and (b) Jarque-Bera statistic should not be significant. The result shows that the histogram is bell-shaped and the Jarque-Bera statistic is not significant since the probability statistics of 0.84 is greater than 5%. It is therefore fitting to state that the residual of the error correction model is normally distributed.



4.3.2 Serial Correlation Test

Given the **DW-stat = 1.563154=** 2 approximately. The introduction of the lag of MSO was to remove the serial correlation that the model exhibited before the introduction of the lag of the dependent variable. We therefore, accept that the model has no serial correlation. This agrees with Breusch-Godfrey Serial Correlation LM Test result below where the probability values of the F-stat and observed R^2 are greater than 0.05.

Table 4.3.2: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.654742	Prob. F(2,28)	0.2093
Obs*R-squared	3.593878	Prob. Chi-Square(2)	0.1658

Source: E-views 10

The result presented in Tables 4.2.2 shows the F-stat value of 1.633939 and the probability statistics of F-ratio is 0.2024. The rule of thumb is that if the probability statistics is less than 0.05, then there is a problem of heteroscedasticity in the estimated model. Since the probability statistics is greater than 0.05(i.e. 0.2024> 0.05) we conclude that the model is free from the problem of heteroscedasticity. As such, the estimated model can be used for decisions making and policy recommendations.

4.3.3 Heteroscedasticity Test

The result presented in Tables 4.2.2 shows the F-stat value of 4.032927 and the probability statistics of F-ratio is 0.2160. The rule of thumb is that if the probability statistics is less than 0.05, then there is a problem of heteroscedasticity in the estimated model. Since the probability statistics is greater than 0.05(i.e. 0.2160 > 0.05) we conclude that the model is free from the problem of heteroscedasticity. As such, the estimated model can be used for decisions making and policy recommendations.

Table 4.3.2: Breusch-Pagan-Godfrey Heteroscedasticity test result

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	4.032927	Prob. F(3,30)	0.2160
Obs*R-squared	9.771271	Prob. Chi-Square(3)	0.0206
Scaled explained SS	6.209615	Prob. Chi-Square(3)	0.1018

Source: Eviews 10

4.3 Hypothesis Testing

H_0 = No significant effect
H_1 = H_0 is not true.
Decision: Reject H_0 if the Probability values < 5% critical level and vice versa.

Re-Statement of Hypotheses

In line with section 1.5 of chapter one, the hypothesis stated is:

H_{01}: Protectionism has no significant effect on the manufacturing sector in Nigeria.

H_{02}: Liberalism has no significant effect on the manufacturing sector in Nigeria.

H_{03}: There is no significant relationship between exchange rate and manufacturing sector output.

Table 4.3.1: OLS Results of the Manufacturing Output Model 1

Variables	Coefficient	T-Statistics	Probability	α = 5% level	Decision
DOP	-0.025651	-0.727116	0.4728	0.05	Accept H_{o1}
ER	0.039085	0.0883816	0.3838	0.05	Accept H_{o3}

Source: Author's Computation using E-views 10

From the table above, it is observed that the estimate of ER and DOP are not statistically significant given the probability values greater than the 5% critical value (0.05). Therefore, we cannot fail to accept the null hypotheses of the study. Protectionism has no significant effect on manufacturing sector output.

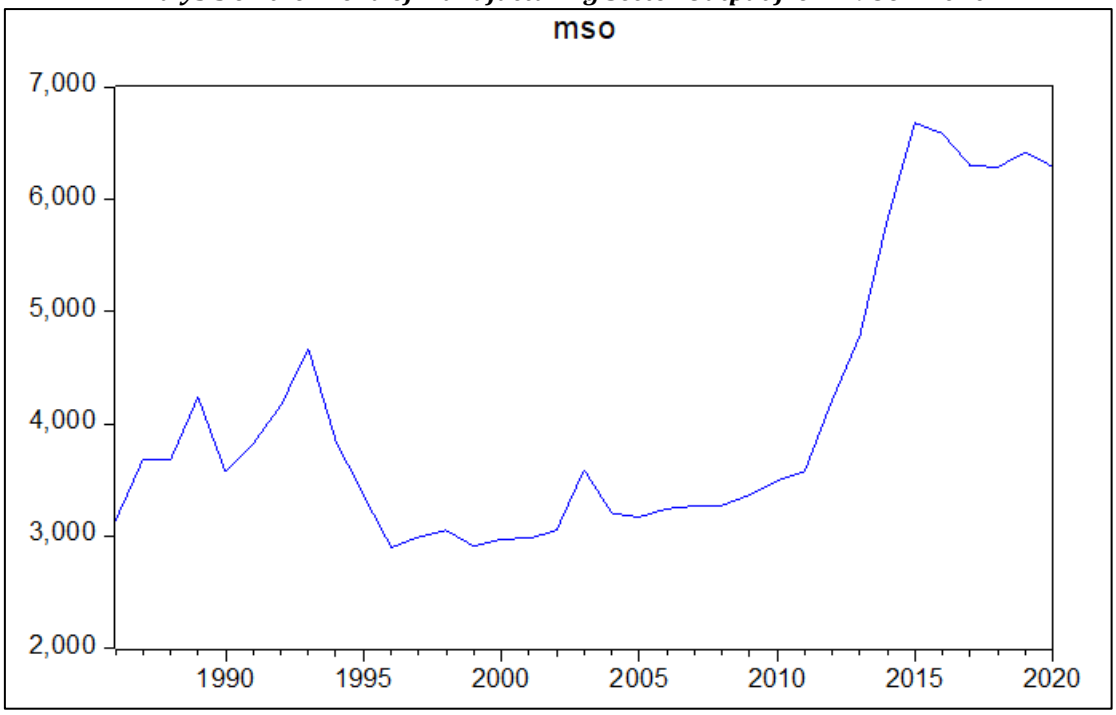
Table 4.3.2: OLS Results of the Manufacturing Output Model 2

Variables	Coefficient	T-Statistics	Probability	α = 5% level	Decision
IP	0.019734	0.687304	0.4910	0.05	Accept H_{o2}
ER	-0.016528	-0.425831	0.6733	0.05	Reject H_{o3}

Source: Author's Computation using E-views 10

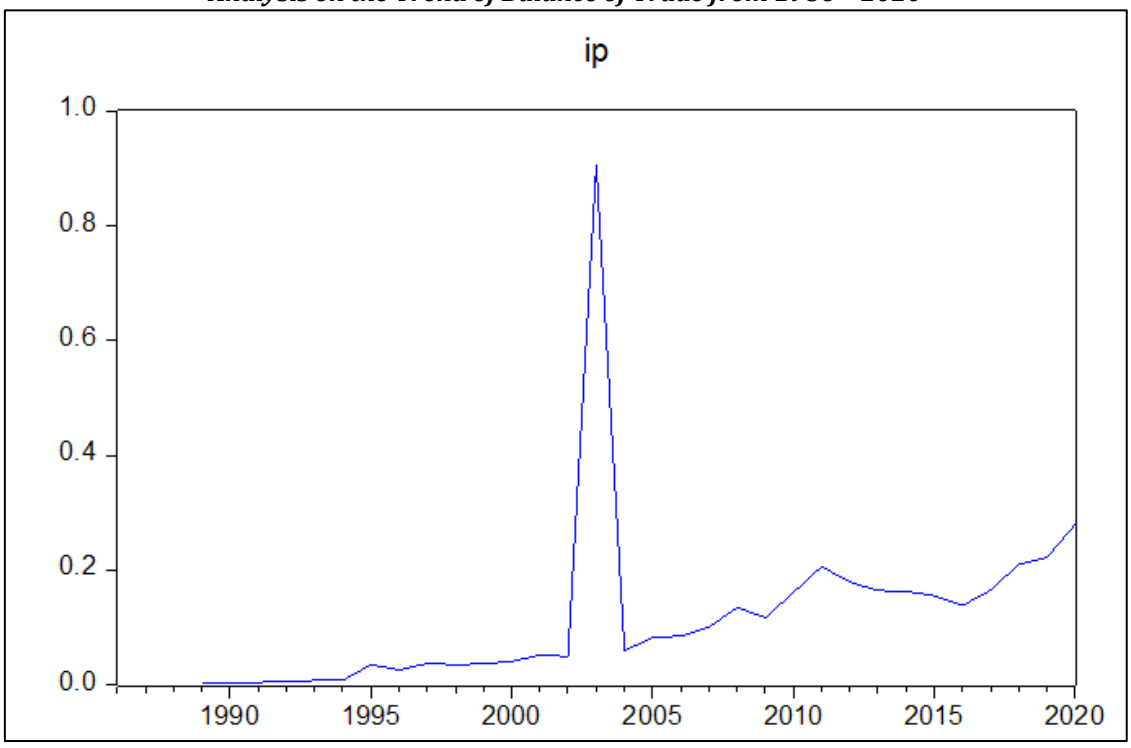
From the table above, it is observed that the estimate of IP and ER are statistically not significant given the probability values greater than the 5% critical value (0.05). Therefore, we cannot fail to accept the null hypotheses of the study. Trade liberalization has no significant effect on manufacturing sector output.

Analysis on the Trend of Manufacturing Sector Output from 1986 – 2020



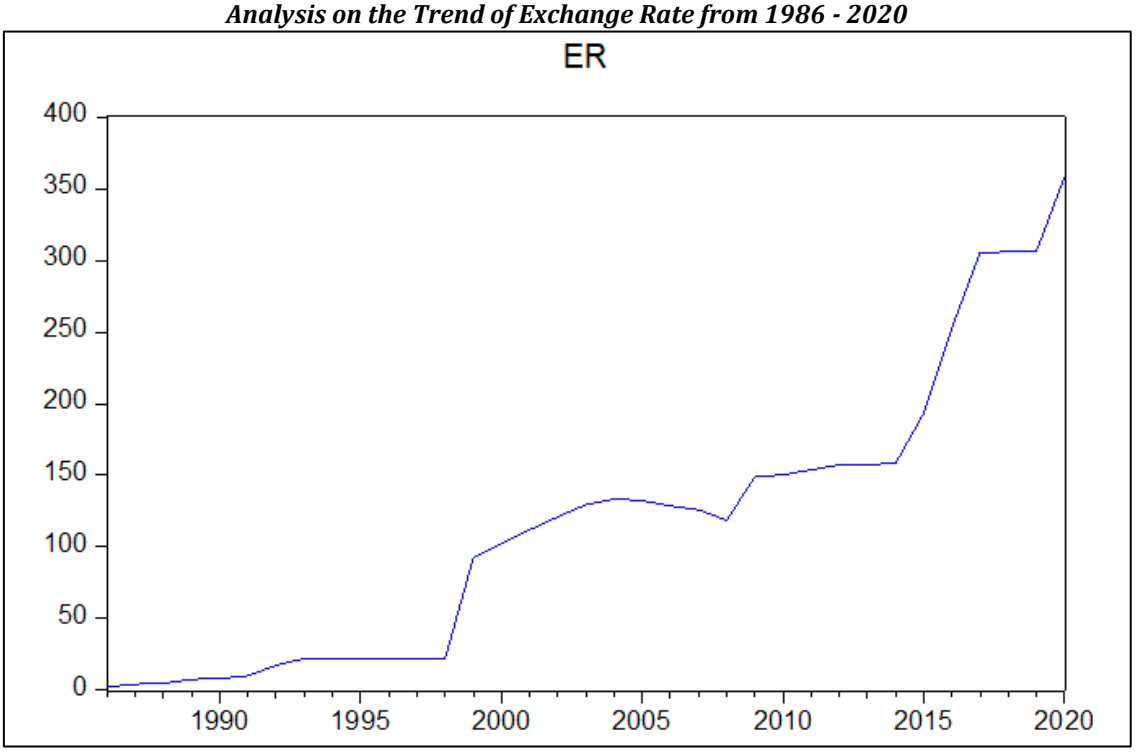
From the graph above, it can be observed that, the output of the manufacturing sector has its highest increase in 1993 and declined to its lowest in 1996. This continued in no clear increase or decrease until 2010 – 2015 where it took a sharp upward trend after which, it began to drop again between 2016-2020. The break in the trend occurred in the 2017-2018 transition, which turned the curve in a downward trajectory.

Analysis on the Trend of Balance of Trade from 1986 – 2020



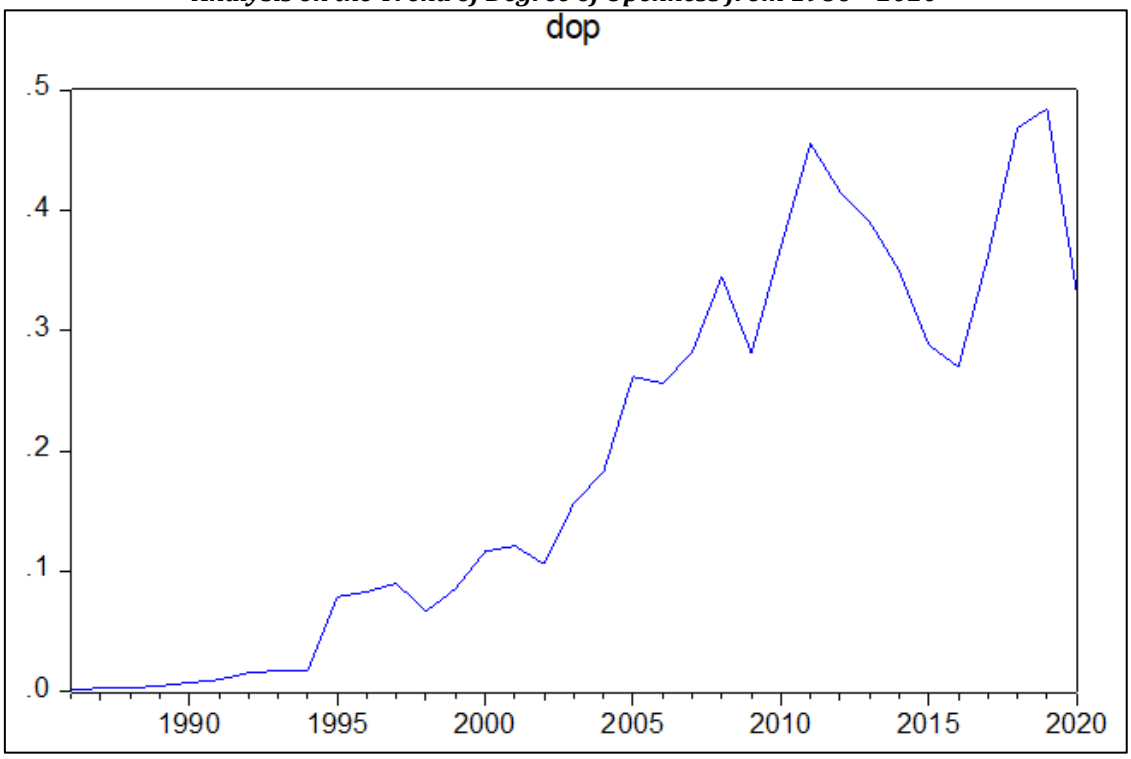
From the graph above, it can also be observed that, import penetration has been exhibiting no clear upward or downward trend. The sharp transition in the trend of the graph came in the period between 2002-2004 and has its highest point in 2003 and returned 2004.

Analysis on the Trend of Exchange Rate from 1986 - 2020



Similarly, it can also be observed that, the exchange rate has been exhibiting a continuous walk in upward trend. The exchange rate has continued to rise progressively overtime from 1986-2020.

Analysis on the Trend of Degree of Openness from 1986 – 2020



From the graph above, it can be seen that the degree of openness has continued to rise in progressive (upward trend). The spike came in 2009 to 2011; and had its deepest point in 2016 before increasing again from 2017 to 2019 and dropping. Upward and downward movement (instability) characterizes the trend.

SECTION FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the study and the conclusions reached. The policy implications, the study's contributions to knowledge, and areas for further research are also presented.

5.1 Discussion of Findings

The study was conducted to investigate the effect of trade policy on the manufacturing sector output in Nigeria with particular focus on the protectionism and trade liberalization. The study hypothesized a positive relationship between manufacturing sector output and the explanatory variables adopting two models were where manufacturing sector output was the dependent variable on degree of openness and exchange rate in model one while in model two, it depended on import penetration and exchange rate. Exchange rate in both models was used as a control variable.

Findings reveal that the variable of protectionism measure by degree of openness, was insignificant and negatively related to manufacturing sector output over the period against the apriori expectation of a positive relationship. Exchange rate was positive and insignificant statistically. In model two, import penetration is positive and insignificant while exchange rate became negative and insignificant. Exchange rate protectionism implies that a country's exchange rate might be undervalued, causing the country to import less and export more than it would with a stronger exchange rate. This finding however was consistent with other works done this the same subject matter. Okere (2016) assessed the impact of trade protectionist policy on the economic growth of Nigeria using the bounds testing (ARDL) approach to cointegration and discovered that trade protectionist policy vis-à-vis export promotion strategy and unemployment are the prime-mover for economic growth of Nigeria especially in the short run. It implies that the level of trade protection in Nigeria has a direct relationship with growth and unemployment in short- run but negative or inverse relationship in the long-run. The OLS method adopted in this study is an estimator is an unbiased long run estimator. Exchange was positive and significant statistically.

However, the analysis on the trend revealed something significant. The manufacturing sector output has been swindling without a clear direction 2010 -2015 when it rose significant under a liberalized trade policy until a transition in policy to the protectionist regime. MSO took a downward turn. This was symmetric with the DOP. This shows that

the implementation of protectionist policy was without a commensurate increase in the economic productivity in the manufacturing sector to meet external demand. This can be further explained in the exchange rate which has ever being on the increase, no productivity to strengthen the Nigerian currency. The openness continues to rise even at the point where MSO begins to decrease but below MSO. Protectionism as good as it is has not yielded in Nigeria because productivity is not stimulated in the manufacturing sector. All these can be traced to the reason Nigerian economy slipped into recession in 2017. These indicators mirrored the phenomenon. Therefore, it can be drawn that, trade protectionist policy needs to be applied selectively and cautiously in combination with trade liberalization with specific measures to stimulate domestic productivity.

5.2 Summary

The objective of the research was to determine the impact of trade policy on the output of the manufacturing sector. Three hypotheses were formulated. The study adopted ordinary least squares econometric approach on the time series data from 1986 to 2020 to generate the estimates of the model to test the hypotheses at 5% level of significance. The research concluded that there is a positive relationship between manufacturing sector output the and trade liberalization while there is a negative relationship between trade protectionism and manufacturing sector output in Nigeria for the period under review. It was therefore concluded that, since the manufacturing sector is the driver of economic growth in any economy, protection as good as it is may not positively impact the manufacturing sector if other stimulating policies are not adopted simultaneously. Liberalized trade policy should be maintained in manufacturing subsectors that utilize imported manufacturing input alongside other incentivizing policies.

5.3 Conclusion

The impact of protectionism on the entire manufacturing sector is advantageous but the Nigerian economy has not harness its productive potentials under this regime hence, the negativity. While higher protection would be beneficial to improving productivity, openness should be maintained in the manufacturing sectors that utilize factor input produced exclusively in foreign countries while pushing bilateral agreements that can increase the external supply of manufacturing sector products that will lead to favourable balance of trade to strengthen our currency in exchange.

5.4 Limitations of the Study

It is proper state that this study suffered a number of setbacks.

1. The study did not look into manufacturing subsector peculiarities that may affect the outcomes of these findings.
2. The study did not consider the impacts of short run dynamics in the effects of protectionism and trade liberalization on the manufacturing sector output.

5.5 Recommendations

Based on the outcomes of this study, the following recommendations are made for policy implementation and further study.

1. Protectionist policies should not merely be enacted without other manufacturing incentives that can increase productivity.
2. Trade liberalization should adopted but only in the manufacturing subsectors and with economies that exchange production inputs with the Nigerian economy.
3. The government should engage in bilateral trade relations with on countries that utilize manufacturing outputs of the Nigerian economy while penetrating the domestic market.
4. Further studies should be conducted to look into the short term dynamics of the impact of trade policy on the manufacturing subsectors.

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Appendix I

Year	Real GDP (N Billion)	Manufacturing Sector Output (N' Billion)	Monthly Average Official Exchange Rate of the Naira (N/US$1.00)	Balance of Trade (Million)	Import (N' Million)	Export (N' Million)	Degree of Openness
1986	17007.77	38.65	2.02	2,937.00	5.9836	8.9206	351816.5
1987	17552.1	43.22	4.02	12,498.90	17.8617	30.3606	1017642
1988	18839.55	63.52	4.54	9,747.10	21.4457	31.1928	1138337
1989	19201.16	72.9	7.39	27,111.00	30.8602	57.9712	1607210
1990	21462.73	84.27	8.04	64,168.20	45.7179	109.8861	2130114
1991	21539.61	110.6	9.91	32,047.20	89.4882	121.5354	4154598
1992	22537.1	153.47	17.3	62,460.50	143.1512	205.6117	6351818
1993	22078.07	221.23	22.05	53,140.70	165.6294	218.7701	7502005
1994	21676.85	354.66	21.89	43,270.40	162.7888	206.0592	7509817
1995	21660.49	414.13	21.89	195,533.70	755.1277	950.6614	34862065
1996	22568.87	477.95	21.89	746,916.80	562.6266	1309.543	24929404
1997	23231.12	546.71	21.89	395,946.10	845.7166	1241.663	36404559
1998	23829.76	620.2	21.89	-85,562.00	837.4187	751.8567	35141784
1999	23967.59	713.82	92.69	326,454.10	862.5157	1188.97	35986837
2000	25169.54	826.03	102.11	960,700.91	985.0224	1945.723	39135611
2001	26658.62	989.11	111.94	509,773.52	1358.18	1867.954	50947257
2002	30745.19	1127.23	120.97	231,482.35	1512.695	1744.178	49201146
2003	33004.8	1304.07	129.36	1,007,651.12	2080.235	3087.886	63028421
2004	36057.74	1516.05	133.5	2,615,736.27	1987.045	4602.782	55107499
2005	38378.8	1778.73	132.15	4,445,678.47	2800.856	7246.535	72979519
2006	40703.68	2082.49	128.65	4,216,161.31	3108.519	7324.681	76369747
2007	43385.88	2401.19	125.83	4,397,805.69	3911.953	8309.758	90166774
2008	46320.01	2761.55	118.57	4,836,255.70	5593.18	10387.69	1.21E+08
2009	50042.36	3170.82	148.88	3,102,373.14	5480.656	8606.32	1.09E+08

Year	Real GDP (N Billion)	Manufacturing Sector Output (N' Billion)	Monthly Average Official Exchange Rate of the Naira (N/US$1.00)	Balance of Trade (Million)	Import (N' Million)	Export (N' Million)	Degree of Openness
2010	54612.26	3578.64	150.3	3,827,142.45	8163.975	12011.48	1.49E+08
2011	57511.04	4527.45	153.86	4,221,068.05	10995.86	15236.67	1.9E+08
2012	59929.89	5588.82	157.5	5,345,250.42	9766.557	15139.33	1.62E+08
2013	63218.72	7233.32	157.31	5,793,815.89	9439.425	15262.01	1.49E+08
2014	67152.79	8685.43	158.55	2,433,433.61	10538.78	12960.49	1.56E+08
2015	69023.93	8973.77	193.28	-2,219,548.48	11076.07	8845.159	1.6E+08
2016	67931.24	8903.24	253.49	-895,232.74	9480.367	8835.612	1.42E+08
2017	68490.98	10044.48	305.79	3,811,512.56	10804.85	13988.14	1.89E+08
2018	69799.94	12455.53	306.08	6,235,242.33	13445.11	19280.04	2.28E+08
2019	71387.83	6469.83	306.92	-636,849.97	147032.2	19909.75	3.38E+08
2020	70014.37	6291.59	358.81	-8,168,415.84	21905499	13737084	3.13E+08

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