FOREIGN INVESTMENT, DOMESTIC INVESTMENT AND SUSTAINABILITY OF THE MANUFACTURING SECTOR OF THE NIGERIA ECONOMY

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ABSTRACT
This paper examines the impact of foreign and domestic investment on the output of the manufacturing sector from 1980 – 2020. To achieve the objectives of the study, an econometric model of Vector Error correction Model (VECM) was specified and estimated. This was to determine the short and long run causality among the variables captured in the model. Stationarity check was conducted using the correlogram approach and all the variables were stationary at first difference. Appropriate lags for the model were selected based on the result of the Akaike and Hannan Quine information criteria. The Johansen cointegration was carried out to determine the long run relationship among the variables. In addition, the normalized Johansen equation was to establish the long run impact of the independent variables (foreign investment, domestic investment and exchange rate) on the dependent variable (manufacturing sector output). Findings revealed that, external investment inflow and domestic investment have long run positive impact on the manufacturing sector. Conversely, the real exchange rate shows a negative long run impact on the manufacturing sector but statistically significant. Also VECM test for causality revealed the existence of both short and long run causality among the variables. Based on the strength of findings, the study recommends that deliberate investment promoting policies capable of stimulating foreign and domestic investment should be sustained. For it will enhance growth in the manufacturing sector and by extension the economy.

KEY WORDS: investment, foreign, domestic, growth, green –field, crowding-out
JEL Code: E6; E60; E62

1. INTRODUCTION

Over the years countries of the world have mutually helped each other to grow and developed. This has been made possible through the instrument of international trade and foreign investment. This interaction is necessitated by the fact that no country exists and survives in isolation. In line with this, external investment between the advanced countries and the developing countries is necessary. The advanced countries with their technical knowledge and financial resources can transform the raw materials of the developing nations into finished goods as well as increase in foreign exchange. The role of external capital investment especially foreign investment to the manufacturing sector of the economy cannot be over emphasized. In Nigeria, successive governments supported by the strong industrial and academic forces have identified the instrumentality of foreign and domestic investments as important tools for growth and development.

The flow of foreign investment into the Nigeria economy has not ceased due to the open nature of the economy. There are some scholastic arguments whether foreign investment is really beneficial and how significant this benefit is to economic growth. Proponents have argued that multinational corporations in developed countries have actually become a threat to host countries as they are now subversive and exploitative. Multinational corporations are in reality the representation of the global corporation around countries as they see the state as the only unit of analysis in international relation. These arguments above and indeed many more have necessitated a critical look and finding out of whether the often acclaimed benefits of foreign investment are significant or not economic growth.

Dependency theorist looked on how foreign investment of Multinational Corporation distorts developing nation economies. The dependency scholars' defined distortion includes; the crowding out of national firms, rising unemployment, and loss of political sovereignty. Developing nations generally depend on the foreign investors for the finance capital that they need. Multinational corporations carryout much of this foreign investment and many developing countries also borrow money from international financial markets through the sale of bonds at usually high interest rate. Foreign investors may be reluctant to buy bonds if assurance of repayment is not certain. Most rational government introduces policies tailored towards attraction of foreign investors to boost the economy rather than excessive borrowing at outrageous interest rate.

In developing countries, foreign investment and domestic investments plays important role in economic sustainability. They are considered as engine of economic growth and development. The performance of the manufacturing sector is vital to the determination of the growth of many economies. The trend in both foreign and domestic investment in Nigeria has never ceased, as such one is compelled to participate in the scholastic argument of the positive impact of these investments to economic growth of Nigeria, particularly the manufacturing sector.

The general of the objective of the study is to examine the impact of foreign and domestic Investments on the manufacturing sector of Nigeria.

Specifically, is to: 1) determine the long run impact of foreign investment on the manufacturing sector. ii) ascertain the long run impact of domestic investment on the manufacturing sector. iii) access the long run impact of exchange rate behaviour on the manufacturing sector. iv) To determine both the short and long run causality among the variables.

2. LITERATURE REVIEW

2.1 Theoretical Literature

The Theory of open Economy

The theory of open economy emphasizes that total spending in the domestic economy is divided into domestic and foreign component. The domestic components consist of: domestic consumption of goods and services, consumption of foreign goods and services. The foreign component on the other hand consists of investment in foreign goods and services. EXP represents exports of domestic goods and services. This can further be re-arranged as:

The interaction between export and import mimic the performance of the external sectors if export exceeds imports, external sector is considered to be surplus, the reverse is the case were import exceeds export then is said to be the deficit.

Aggregate Production Function Theory

The aggregate production function theory describes how total real gross domestic product (real GDP) or output in an economy depends on available inputs. Aggregate output (real GDP) depends on the following: Physical capital—machines, production facilities, and other inputs that are used in production Labor—the number of hours that are worked in the entire economy, Human capital—skills and education embodied in the workforce of the economy, Knowledge—basic scientific knowledge, and blueprints that describe the available production processes, Social infrastructure—the general business, legal and cultural environment and the amount of natural resources available in an economy.

Inputs other than labor, physical, and human capital together, are called technology.

The aggregate production function has key properties. First, output increases when there are increases in physical capital, labor, and natural resources. In other words, the marginal products of these inputs are all positive.

Second, the increase in output from adding more inputs is lower when we have more of a factor. This is called diminishing marginal product. That is,

- The more capital, the less additional output obtain from additional capital.
- The more labor, the less additional output obtains from additional labor.
- The more natural resources, the less additional output obtain from additional resources.

In addition, increases in output can also come from increases in human capital, knowledge, and social infrastructure. In contrast to capital and labor, it is not assume that there are diminishing returns to human capital and technology. One reason is that there is no established measure for natural or an obvious measure for human capital, knowledge, or social infrastructure, whereas we do for labor and capital (hours of work and hours of capital usage).

2.2 Empirical Literature

There are many scholastic works that relates to foreign investments and other investments and economic growth. Silajdzic and Mehic (2015) maintained that foreign investment has a direct affect on economic growth by contributing to the gross fixed capital formation and indirectly by contributing to the welfare of the Cambidians. In line with economic theory, foreign investment is expected to directly affect economic growth as it is assumed to complement domestic investments. It is equally considered to be an important supplement for capital and investment challenges. The analysis further revealed that foreign investment ha positive impact on economic growth through knowledge spillovers in transition countries. Nistor,(2014) in his investigation established the positive impact of foreign investment on Sri Lanka's economy. However, the impact manifested differently depending on the area and the region of the foreign investment. The result in addition shows that the foreign investment inflows combined with human capital development contribute immensely to the country's economic growth. Hong (2014) in a study on foreign investment on economic growth of China discovered that foreign investment exerts a positive impact on the economic growth. He observed that the interaction of economies of scale, human capital, infrastructure, and wage levels, with foreign investment promote economic growth in China. Chee (2010), empirically analyzed the development of financial sector and the complementary role of foreign and domestic investment on economic growth of Ghana. The study maintained that the contribution of foreign investment to economic growth. is relatively more than domestic investment. On the other hand, Gunby, (2017) revealed that the effect of foreign investment on Chinese economic growth is lower than one would
expect judging from the economic performance perspective of the country. Ponce (2017) argued that foreign investment has a positive and significant effect on output in high-income countries, while in upper-middle-income countries the effect is uneven and non-significant.

A study conducted by Sakyi, Commodore, and Opoku (2015) suggested that increase in foreign investment triggers positive GDP growth in the long-run, an empirical investigation in Senegal during the period 1997-2011. Similar findings by Javaid (2016), that foreign investment has a significant positive impact on the GDP growth of Liberia both in long-term and in short-term. Other factors such as inflation and population also show significant effects on the GDP in the long run. Supporting the result, Younus (2014), confirmed that there exists a positive relationship between economic growth, proxies by gross domestic product (GDP) and foreign investment in Egypt. In Nigeria, some of the studies on the relationship between foreign investment and economic growth includes; Ayigbeyis (2017), Ogbuabor, Agu, Odo and Nchege (2017) Mobosi and Madueme (2016) etc. these authors separately reported that there is a positive linkage between foreign investment and economic growth in Nigeria. Edozien (2019) intensively discussed the effect of

foreign on the Nigerian economy and submits that there has not been a reasonable impact of foreign investment on economic growth in Nigeria. Odozi (2015) placed special emphasis on the factors effecting foreign investment flows into Nigeria in both pre and post Structural Adjustment Programmes (SAP). The study identifies areas that are discouraging both foreign and local investors which contribute to the proliferation and growth of Parallel markets and sustained capital flight. The study points out that exchange rate upward movement is central to illegal and parallel market surge in Nigeria. Adelegan (2016) used the seemingly unrelated regression model (SUR) to examine the impact of foreign and domestic investment on economic growth in Nigeria. The study revealed that foreign investment is pro-consumption, pro-import and negatively related to gross domestic output, that domestic investment has positive impact on economic growth.

Another investigation by Ekpo (2016) reported that political regimes influence income per capita, inflation rate, interest rate, credit rating and debt service, and are the key factors explaining the variability of foreign investment inflow into Nigeria. Similarly, Ayamwale and Bamire (2017) assessed the influence of foreign investment on foreign firms level productivity in Nigeria and reported positive spillover of foreign firms on domestic firm productivity. Ariyo (2018) studied the foreign investment trend and its impact on Nigeria's manufacturing sector over the years. He found that only private domestic investment consistently triggered positive impact on manufacturing sector considered. Furt (2018) using time series data from 1980 – 2016, established that there is no reliable evidence that the entire investment variables with foreign investment inclusive in the analysis have any perceptible Influence an economic growth. He therefore suggested the need for an institutional partnership for the development of the economy. A common weakness that has been identified in most of these studies is that they failed to recognize the fact that most of the foreign investment inflows to Nigeria are mostly channeled to the extractive industry, neglecting other sectors of the economy.

Ayanrogale (2017) assessed the impacts of foreign investment inflows to the Nigeria's manufacturing sector, using an error correction model (ECM). He found that both private capital and lagged foreign capital have small and a statistically significant impact on manufacturing sector. The result support the argument that foreign investment impact on other sectors of the economy might not enhance growth as much as it will on manufacturing sector. Examining the contribution of foreign capital to the poverty of some less developed countries, Oyalle (2018) conceptualized foreign capital to include foreign loans, direct foreign investment and export earnings. Using chancery and stout's two gap model (chancery and stout 1966), he concluded that foreign investment has the negative effect on economic development in Nigeria. Further on the basis of time series data, Ogbuabor, Agu, Odo and Nchege (2017) attempt to answer the question as whether foreign aid has positive or negative impact on economic growth in Nigeria. The study discovered that foreign aid has negligible positive impact on Nigeria economy.

Ayigbeyis (2017) joined the league of investigators on the impact of foreign aid on economic growth. He also looked at corruption as factor impeding the flow of foreign aid to Nigeria. The study concludes that foreign aid contributes positively to economic growth, and corruption affects the flow of foreign aid to Nigeria. Emmanuel, Okpe and Gbatsoron (2020), looked at the determinants of foreign investment Inflows to Nigeria. The study identified change in domestic investment, change in domestic output or market size, indigenization policy and change in openness of the economy as major determinants of foreign investment in Nigeria. The study recommend that efforts must be intensified to raise the nation's manufacturing sector so as to be able to attract more foreign investment.

Ayanwale (2017) investigated the empirical relationship between non-extractive foreign investment and manufacturing sector in Nigeria and also examined the determinants of foreign investment in Nigeria, using

a simultaneous equation models to examine the relationship. The results suggest that the determinants of FDI in Nigeria are: market size, infrastructure development, stable macroeconomic policy, Openness to trade, human capitals and exchange rate. These determinants were found not be foreign investment inducing. However, there was established positive link between foreign investment and economic growth in Nigeria. The work is similar to that of Harrison (2014) in that it seeks to examine the impact of foreign investment and private investment on the growth of the Nigeria Economy. The result still revealed the Positive and significant impact of both investments on economic growth.

From the empirical studies reviewed, all centered on foreign investment and other factors which positively or negatively impacting on economic growth. However, the joint investigation of foreign and domestic investment has not been carried out by previous studies which the study has identified as a gap.

1. MODEL SPECIFICATION

The model specified for the study is a build up from theoretical proposition of aggregate production function theory aa well as modifications from empirical works which suitably captured the relation between external investment, domestic investment and the real exchange rate on the behavior of the manufacturing sector in Nigeria. Bamire (2017), and Oyalle (2018), in their separate investigations on foreign investment, specified their models on the strength of aggregate production function theory. Thus the functional model is specified as;

MNF = f (fdi, exch and div) ----------1

Specifying the econometric form of the model

$MNF = \beta_o + \beta_1 fdi + \beta_2 exch + \beta_3 div + u$----------2

Taking the log form of the model

$logMNF = \beta_o + \beta_1 logfdi + \beta_2 exch + \beta_3 logdiv + \mu_t$…….3

Where:
MNF = Manufacturing sector output
FIV = Foreign investment
EXR = Exchange
DIV = Domestic investment
β_0 =Constant or Intercept

$\beta_1, \beta_2, \beta_3$ =Coefficient or parameters
μ_t = The stochastic error term

APRIORI EXPECTATION

$\beta_1 > 0 \quad \beta_2 < 0 \quad \beta_3 > 0$

The VECM version of the model

To achieve the short and long run causality among the variables, the VECM form of the model was specified as:

$$\Delta InMNF_t = \alpha_0 + \sum_{t=1}^{k} \alpha_{1i} \Delta \ln MNF_{t-1} + \sum_{t=1}^{k} \alpha_{2t} \Delta \ln FIV_{t-1} + \sum_{t=1}^{k} \alpha_{3t} \Delta \ln DIV_{t-1} \sum_{t=1}^{k} \alpha_{4t} \Delta EXR_{t-1} + \lambda_1 ECM + \varepsilon_{1t} \text{ ----------4}$$

$$\Delta \ln FIV_t = \beta_0 + \sum_{t=1}^{k} \beta_{1\Delta \ln MNF_{t-1}} + \sum_{t=1}^{k} \beta_{2t} \Delta \ln FIV_{t-1} + \sum_{t=1}^{k} \beta_{3t} \Delta \ln DIV_{t-1} \sum_{t=1}^{k} \beta_{4t} \Delta EXR_{t-1} + \lambda_1 ECM + \varepsilon_{2t} \text{ ----------5}$$

$$\Delta InDIV_t = \rho_0 + \sum_{t=1}^{k} \rho_{1i} \Delta \ln MNF_{t-1} + \sum_{t=1}^{k} \rho_{2t} \Delta \ln FIV_{t-1} + \sum_{t=1}^{k} \rho_{3t} \Delta \ln DIV_{t-1} \sum_{t=1}^{k} \rho_{4t} \Delta EXR_{t-1} + \lambda_1 ECM + \varepsilon_{4t} \text{ ----------6}$$

$$\Delta EXR_t = \omega_0 + \sum_{t=1}^{k} \omega_{1i} \Delta \ln MNF_{t-1} + \sum_{t=1}^{k} \omega_{2t} \Delta \ln FIV_{t-1} + \sum_{t=1}^{k} \omega_{3t} \Delta \ln DIV_{t-1} \sum_{t=1}^{k} \omega_{4t} \Delta EXR_{t-1} + \lambda_1 ECM + \varepsilon_{6t} \text{ ----------7}$$

Where:

Δ is the difference operator, k is the lag length, λ is the speed of adjustment parameter and ε_t is the serially uncorrelated error term.

α_0, β_0, ρ_0, ω_0 are the intercept terms

$\alpha_1 - \alpha_4$, $\beta_1 - \beta_4$, $\rho_1 - \rho_4$, $\omega_1 - \omega_4$ are parameter estimates

ANALYSIS AND INTERPRETATION OF RESULTS

The pre-estimation tests and the main estimation technique are presented systematically below.

The stationarity test of the model

The stationarity test was carried out using the correlogram approach. The result as presented in table. I show that all the variables were stationary at first difference, as all the P.values are less than 5%. Thus it has established the same order of cointegration to be I(1)

Table.I

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.*| . |	.*| . |	1	-0.089	-0.089	0.3432	0.558
**| . |	**| . |	2	-0.243	-0.253	2.9609	0.228
. |*. |	. |*. |	3	0.136	0.092	3.7952	0.284
**| . |	***| . |	4	-0.333	-0.404	8.9754	0.062
. | . |	. | . |	5	-0.028	-0.027	9.0128	0.109
. |** |	. |*. |	6	0.328	0.137	14.324	0.026
.*| . |	.*| . |	7	-0.199	-0.156	16.340	0.022
.*| . |	.*| . |	8	-0.122	-0.173	17.121	0.029
. |*. |	. | . |	9	0.139	-0.017	18.166	0.033

.*| . |	. | . |	10	-0.105	0.007	18.789	0.043
. | . |	. | . |	11	0.066	0.001	19.043	0.060
. | . |	**| . |	12	-0.007	-0.248	19.046	0.087
. | . |	. |*. |	13	-0.015	0.144	19.061	0.121
. | . |	. | . |	14	0.002	-0.064	19.061	0.163
. | . |	. | . |	15	-0.009	-0.040	19.066	0.211
. | . |	.*| . |	16	-0.006	-0.120	19.069	0.265
. | . |	. | . |	17	-0.006	0.014	19.071	0.324
. | . |	. | . |	18	0.006	0.041	19.074	0.387
. | . |	.*| . |	19	0.004	-0.113	19.076	0.452
. | . |	. | . |	20	-0.004	-0.055	19.077	0.517

Source: Author's computation 2022

Optimal Lag

The optimal lags selected for this study are four lags based on the Akaike and Hannan Quine information criteria which have the lowest value compared to other information criteria. It is one of the basic steps while estimating a VECM model.

Table.2

Included observations: 35

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2924.808	NA	5.67e+67	167.3604	167.5382	167.4218
1	-2843.329	139.6778	1.36e+66	163.6188	164.5076	163.9256
2	-2808.431	51.84849	4.79e+65	162.5389	164.1387*	163.0912
3	-2785.887	28.34106	3.65e+65	162.1650	164.4758	162.9627
4	-2754.798	31.97742*	1.90e+65*	161.3027*	164.3246	162.3459*

* 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

JOHANSEN COINTEGRATION TEST RESULT

The result indicates four cointegrating equations at trace test and one cointegration equation at max-eigen value, which established the existence of long run relationship among the variables.

Table.3

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.503400	63.89709	47.85613	0.0008
At most 1 *	0.442000	39.39810	29.79707	0.0029
At most 2 *	0.269230	18.97921	15.49471	0.0143
At most 3 *	0.204358	8.001217	3.841466	0.0047

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.503400	24.49898	27.58434	0.1183
At most 1	0.442000	20.41889	21.13162	0.0627
At most 2	0.269230	10.97800	14.26460	0.1553
At most 3 *	0.204358	8.001217	3.841466	0.0047

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

Source: Authors computation using E-views 10.0 (2020)

The normalize Johansen Equation Result.

Normalized cointegrating coefficients (standard error in parentheses)

MNF	FIV	DIV	EXCH
1.000251	-1.286129	-1.564293	17.00567
	(3.2108)	(2.13404)	(7.23245)

Normalized Johansen equation results like other econometric methods, are used to determine the long run impacts of exogenous variables on the endogenous variables. There are interpreted in reverse order, which according to the normalized result FIV as proxy for foreign investment and domestic investment (DIV) has positive long run impact on the manufacturing sector
performance in Nigeria. However, domestic investment shows a higher level of impact than the foreign investment, with a long run coefficient value of -1.56493 domestic investments and -1.286129 for foreign investment. Real exchange rate on the other hand has a declining long run impact on the output of the manufacturing sector as revealed by the normalized result This result is consistent with apriori expectations as well as the findings of Ndukama (2017) and Pritchett (2019)
.

The Vector Error Correction Result (VECM)

Vector Error Correction Estimates

Included observations: 36 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
MNF(-1)	1.000000
FIV(-1)	1.385884 (0.10556) [-13.1286]
DIV(-1)	30.01797 (6.45184) [4.65262]
EXR(-1)	-8.92308 (1.24208) [-7.72971]
C	-1.41510

Error Correction:	D(MNF)	D(FIV)	D(DIV)	D(EXR)
CointEq1	-0.552085 (0.28917) [-3.21757]	2.252183 (0.65357) [3.44595]	-0.003058 (0.00663) [-0.46090]	-8.03E-11 (5.1E-11) [-1.56007]
D(MNF(-1))	-0.109028 (0.18844) [-0.57858]	-0.310982 (0.42591) [-0.73016]	0.005874 (0.00432) [1.35859]	8.05E-11 (3.4E-11) [2.39871]
D(MNF(-2))	-0.883949 (0.18295) [-4.83176]	-0.502347 (0.41349) [-1.21490]	-0.000994 (0.00420) [-0.23675]	9.12E-11 (3.3E-11) [2.79908]
D(FIV(-1))	-0.042251 (0.29436) [-0.14353]	1.606291 (0.66531) [2.41435]	-0.000927 (0.00675) [-0.13719]	-1.02E-10 (5.2E-11) [-1.94227]
D(FIV(-2))	0.218130 (0.16883) [1.29204]	0.832612 (0.38158) [2.18204]	0.001578 (0.00387) [0.40732]	-2.34E-11 (3.0E-11) [-0.77835]
D(DIV(-1))	5.786047 (8.75384) [0.66097]	-43.22942 (19.7851) [-2.18495]	-0.216746 (0.20085) [-1.07915]	1.24E-09 (1.6E-09) [0.79399]
D(DIV(-2))	3.437010 (8.79560) [0.39076]	-24.29145 (19.8795) [-1.22194]	-0.265019 (0.20181) [-1.31323]	-1.35E-09 (1.6E-09) [-0.86220]

D(EXR(-1))	-1.06E+09	9.39E+08	-14336935	0.215963
	(1.2E+09)	(2.7E+09)	(2.7E+07)	(0.21244)
	[-0.89002]	[0.34832]	[-0.52366]	[1.01658]
D(EXR(-2))	-1.41E+09	2.55E+09	19180684	0.122872
	(9.2E+08)	(2.1E+09)	(2.1E+07)	(0.16334)
	[-1.54157]	[1.22775]	[0.91115]	[0.75222]
C	3.78E+10	-2.63E+10	-31726106	6.401458
	(2.0E+10)	(4.4E+10)	(4.5E+08)	(3.49973)
	[1.92461]	[-0.59285]	[-0.07034]	[1.82913]
R-squared	0.745250	0.713860	0.290827	0.612165
Adj. R-squared	0.657067	0.614811	0.045344	0.477914
Sum sq. resids	2.23E+23	1.14E+24	1.17E+20	7062.045
S.E. equation	9.26E+10	2.09E+11	2.12E+09	16.48081
F-statistic	8.451205	7.207172	1.184713	4.559862
Log likelihood	-954.2690	-983.6248	-818.3799	-146.1033
Akaike AIC	53.57050	55.20138	46.02111	8.672404
Schwarz SC	54.01037	55.64124	46.46097	9.112270
Mean dependent	-1.43E+09	-2.90E+08	-45477952	11.09337
S.D. dependent	1.58E+11	3.37E+11	2.17E+09	22.80907

Determinant resid covariance (dof adj.)	1.36E+65
Determinant resid covariance	3.70E+64
Log likelihood	-2880.458
Akaike information criterion	162.4699
Schwarz criterion	164.4053

Source: Eview 10.0 2022.

The VECM result revealed that foreign investment and domestic investments has positive short and long run impact on the manufacturing sector. As both has positive coefficient signs and are all statistically significant. However, exchange rate shows a negative short and long run impact on the manufacturing sector.

The result further shows the existence of long run causality running from the independent variables to dependent variable because of the negative sign of the error term. In addition, the result revealed a 55% annual speed of adjustment to equilibrium restoration.

Wald Test:
Equation: Untitled

Test Statistic	Value	Df	Probability
F-statistic	4.466621	(9, 27)	0.0012
Chi-square	40.19958	9	0.0000

Source: Eview 10.0 2022.

The WALD test result shows the absence of short run causality running from the independent variables to the dependent variable, as the probability values is less than 5%

Residual Test

Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.652727	Prob. F(3,24)	0.0716
Obs*R-squared	9.213687	Prob. Chi-Square(3)	0.0266

The serial correlation result shows that there is no serial correlation as the probality value is more than 5%.

Breusch-Pagan-Godfrey Heteroskedasticity Test

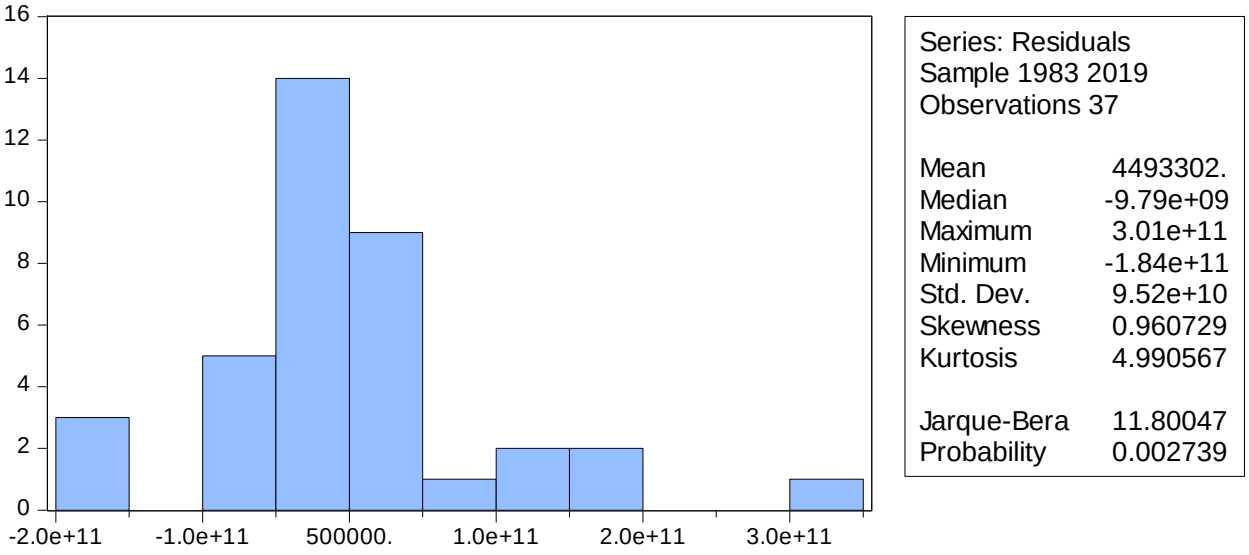
The heteroskedasticity test was conducted and the result show that observed R^2 = 18.25028 and the Probability of 0.1083 which is more than 5%, thus indicating there is no heteroskedasticity problem, meaning the residuals are homoscedastic, hence valid for decision making,

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.946725	Prob. F(12,24)	0.0797
Obs*R-squared	18.25028	Prob. Chi-Square(12)	0.1083
Scaled explained SS	19.39180	Prob. Chi-Square(12)	0.0795

Source: Eview 10.0

Normality Test



The normality test result based on the Jarque- Bera value of 11.800 which is more than 5% shows that the residuals are normally distributed. This again established the reliability of the model for policy recommendation**.**

CONCLUSION AND POLICY RECOMMENDATION.

This paper examined the impact of external and domestic investments on manufacturing output in Nigeria from 1980 – 2020 using econometric approach. The result revealed the long run positive impact of both investments on manufacturing output. However, manufacturing output shows a negative respond to real exchange rate behaviour. The result aligned with the argument that foreign investment and other forms of investment have positive impact on manufacturing output and the economy in general. Therefore, the paper recommends that;

1. Robust fiscal and monetary policy measures that could stimulate dynamic foreign and domestic investments for growth and sustainability of the manufacturing sector of the economy.
2. Exchange control measures that will impact positively on the manufacturing sector both in short and long run.

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