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Effect Foreign Capital Inflows on the Growth of Manufacturing Sector in Nigeria

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Abstract
This study investigates the effect of foreign capital inflows on the growth of the manufacturing sector in Nigeria over the 1986–2020 period. Using time series data sourced from the World Bank and Central Bank of Nigeria, the study employs the Engle-Granger two-step cointegration technique and Granger causality tests. Capital inflows are disaggregated into foreign direct investment (FDI), portfolio investment, official development assistance (ODA), and remittance inflows, while manufacturing sector growth is measured as the log of sectoral output. Results show that FDI and portfolio investment have significant positive impacts on manufacturing growth, while ODA exerts no significant effect. Granger causality tests reveal a unidirectional causal relationship from both FDI and portfolio investment to manufacturing sector growth. The study recommends that the Nigerian government enhance infrastructure and policy frameworks to attract sustainable foreign capital that can complement domestic investment in the manufacturing sector.

Keywords: Foreign Capital Inflow, Manufacturing Sector Growth, Foreign Direct Investment, Portfolio Investment, Official Development Assistance

1. Introduction

The manufacturing sector plays a pivotal role in the economic development of both advanced and emerging economies. Its strategic relevance stems from its ability to generate substantial backward and forward linkages across various sectors, thereby stimulating broader industrial growth and structural transformation. Manufacturing is a key component of the industrial sector. It involves the conversion of raw materials into finished goods using labour, capital, land, and technology through defined production processes. In advanced economies, the manufacturing sector has proven to be instrumental in reducing import dependency, increasing export capacity, generating foreign exchange earnings, boosting employment, and raising per capita income, ultimately contributing to improved consumption levels and living standards (Mounde, 2017) [17]. Moreso, the sector tends to mobilise investment capital more rapidly than many other segments of the economy and fosters stronger inter-sectoral integration. According to Simbo (2012) [35], the manufacturing sector is globally acknowledged as a cornerstone of sustainable growth and a catalyst for long-term economic transformation, as evidenced by the developmental experiences of several industrialised and newly industrialised countries.

In Nigeria, however, the manufacturing sector has historically underperformed relative to its potential. Between 1981 and 2020, the sector's contribution to gross domestic product (GDP) remained consistently low despite the implementation of various macroeconomic policies and development strategies. Data from the Central Bank of Nigeria (CBN, 2020) reflects the sector's limited contribution to national output, even in the face of deliberate policy interventions aimed at revitalisation. As noted by Alege and Ogun (2014) [5], the significance of the manufacturing sector has been emphasised across multiple national development plans including the first, second, third, and fourth phases as well as through several industrial policies and medium-term strategies. The country has also shifted over time from import-substitution industrialisation in the pre-Structural Adjustment Program (SAP) era to export-promotion strategies in the post-SAP period. Yet, tangible outcomes remain elusive.

One major constraint facing Nigeria's manufacturing sector is the shortage of long-term investment capital, especially given the scale of infrastructural and technological upgrades required.

When domestic capital is insufficient to meet investment needs, external financing becomes essential. As Adegboye (2014) [1] points out, developing countries like Nigeria require sustained and substantial investments to meet rising capital demands and drive productive capacity. To this end, various channels of foreign capital inflows including foreign direct investment (FDI), foreign portfolio investment (FPI), and official development assistance (ODA) have been explored.

FDI typically involves long-term capital inflows with managerial control by foreign investors (Okafor *et al*., 2016) [25]. FPI, on the other hand, includes cross-border transactions in financial assets such as stocks, bonds, and short-term securities, without conferring direct control. ODA commonly referred to as foreign aid encompasses public sector transfers in the form of grants and concessional loans intended to support development efforts in recipient countries. Several studies have evaluated the impact of these external capital flows on economic growth and development, with varying results. While many scholars underscore their potential to drive industrial growth, stimulate employment, and improve infrastructure, others highlight concerns about volatility, dependency, and limited sector-specific targeting.

A significant body of literature remains divided over the actual effectiveness of capital inflows in fostering manufacturing sector growth. While some studies indicate a positive relationship between foreign capital inflows and industrial performance (Driffield & Jones, 2013; Aizenman *et al*., 2013) [11, 4], others argue that the benefits are conditional on institutional quality, absorptive capacity, and macroeconomic stability (Reisen & Soto, 2001) [32]. In Nigeria, this debate is particularly relevant given the manufacturing sector's continued underperformance despite substantial inflows of external capital. Compounding this issue are broader macroeconomic challenges, including insecurity, infrastructural deficits, low industrial productivity, unemployment, and persistent poverty.

Notably, limited empirical studies disaggregate the effects of different types of capital inflows on the manufacturing sector. Existing research tends to focus on aggregate economic growth or broad sectoral analysis without isolating the manufacturing sector. Furthermore, the causal relationship between FDI, FPI, ODA, and manufacturing output remains unclear, with inconsistent findings across different contexts. This lack of consensus and the limited sector-specific evidence underscore the need for further investigation.

Against this backdrop, the present study seeks to examine the effect of various dimensions of foreign capital inflows namely FDI, FPI, and ODA on the growth of the manufacturing sector in Nigeria between 1986 and 2020. By employing the Engle-Granger two-step cointegration technique and Granger causality tests, this research aims to provide new insights into the direction and magnitude of these relationships and offer actionable policy recommendations.

Given the operational problem and the gap existing in literature, this study examined the effect of foreign capital inflow dimensions on the growth of manufacturing in Nigeria.

2. Literature Review and Hypotheses Development

2.1 Foreign Direct Investment (FDI) and Manufacturing Sector Growth

Foreign direct investment (FDI) refers to a long-term investment by a foreign entity in a domestic enterprise where the investor obtains a significant ownership stake, usually exceeding 10%, and participates in managerial control and decision-making processes. FDI may take the form of mergers and acquisitions, greenfield investments, intra-company loans, or reinvested earnings (Chen, 1983; Hannon & Reddy, 2012) [10, 15]. According to Glass and Saggi (2009) [13], FDI involves not only capital injection but also the transfer of technology, skills, and business practices, making it a potent tool for economic transformation in recipient countries. Within the Nigerian context, Otepola (2002) [30] and Nwankwo (2006) [20] underscore that FDI has historically served as a key source of capital for industrial expansion and development planning.

From a theoretical standpoint, the Eclectic Paradigm (Dunning, 1980) explains FDI through the interaction of ownership, location, and internalization advantages. Additionally, endogenous growth theory posits that FDI enhances long-term growth by facilitating technology diffusion, human capital development, and increasing the productivity of domestic firms. This is particularly relevant to the manufacturing sector, which depends on sustained investment in infrastructure, innovation, and capacity utilization.

Empirical evidence provides mixed outcomes regarding the impact of FDI on manufacturing growth. For instance, Adekunle *et al*. (2020) [3] found that FDI positively influences Nigeria's industrial output and showed unidirectional causality between FDI and industrial performance. Similarly, Obi-Nwosu *et al*. (2018) [22] concluded that FDI significantly affects Nigeria's manufacturing capacity and that a long-run equilibrium relationship exists between FDI and sectoral output. However, some studies present a more cautious view. Etale and Sawyerr (2020) [12] observed that while FDI can contribute positively to GDP, its effects on long-term growth may be undermined by profit repatriation, low absorptive capacity, and sectoral misalignment. Critics argue that FDI in Nigeria is often concentrated in extractive sectors such as oil and gas, offering minimal spillover to manufacturing.

Given the theoretical expectations and the mixed empirical evidence, this study proposes to investigate the extent to which FDI contributes to manufacturing sector growth in Nigeria. Accordingly, the first hypothesis is stated as follows:

H_{01}: Foreign direct investment has no significant effect on the growth of the manufacturing sector in Nigeria.

2.2 Foreign Portfolio Investment (FPI) and Manufacturing Sector Growth

Foreign portfolio investment (FPI) encompasses cross-border transactions involving equity securities, bonds, money market instruments, and other financial assets in which the investor does not gain controlling interest. Unlike FDI, FPI is more liquid, volatile, and driven by short-term risk-return considerations (Obadan, 2004) [21]. It typically enters emerging markets seeking high yields and currency arbitrage opportunities. FPI can contribute to economic growth by enhancing financial market efficiency, expanding access to capital, and fostering financial innovation, all of which may indirectly support the manufacturing sector.

Theoretically, modern portfolio theory (Markowitz, 1952) underlines the investor's motive for diversification and risk optimization. Additionally, the capital market development hypothesis posits that FPI inflows can catalyze market liquidity, reduce borrowing costs, and promote private sector development. In the manufacturing sector, better access to financing and improved capital market depth can enable firms to invest in production technologies and scale up operations.

Empirical studies on FPI's impact reveal both positive and

negative outcomes. On the one hand, Adekunle *et al*. (2020) [3] reported that FPI had a statistically significant effect on industrial production in Nigeria. Etale and Sawyerr (2020) [12] also found that FPI contributed positively to GDP growth over the 2001–2018 period. These findings suggest that portfolio flows, while short-term in nature, can still influence productive activity, particularly when absorbed by sectors with financial deficits. On the other hand, the high volatility of FPI remains a concern. It is sensitive to global interest rates and risk perceptions, often resulting in sudden reversals or capital flight during crises. Consequently, some scholars argue that its developmental impact is limited and that it contributes little to long-term investment or employment generation. Given these competing perspectives, this study seeks to determine whether FPI has a measurable influence on Nigeria's manufacturing sector performance. The second hypothesis is therefore stated as:

H_{02}: Foreign portfolio investment has no significant effect on the growth of the manufacturing sector in Nigeria.

2.3 Official Development Assistance (ODA) and Manufacturing Sector Growth

Official development assistance (ODA), also known as foreign aid, refers to capital flows from donor governments and international institutions to developing countries in the form of grants and concessional loans. These funds are often targeted toward improving infrastructure, institutional capacity, public services, and macroeconomic stability (Sandrina, 2005). In the Nigerian context, ODA has been used to support sectors such as education, healthcare, and infrastructure, with the broader objective of poverty reduction and sustainable development. According to Okon (2012) [27], enhanced ODA could help close the savings-investment gap and address challenges such as low industrial output, high unemployment, and poor infrastructure.

The theoretical basis for ODA's impact is found in the Two-Gap Model (Chenery & Strout, 1966) [10], which posits that external aid can alleviate the foreign exchange and savings constraints faced by developing economies. Similarly, the Big Push Theory (Rosenstein-Rodan, 1943) argues that large-scale investment, supported by foreign aid, can initiate industrialization and structural transformation. In theory, ODA can create an enabling environment for manufacturing by funding infrastructure, energy projects, and institutional reforms. Despite its theoretical promise, empirical studies show mixed results on the effectiveness of ODA. Sandrina (2005) highlighted that well-targeted aid programs can enhance productivity and welfare. However, critics argue that ODA often fails to translate into sustained economic growth due to issues such as poor governance, corruption, conditionality burdens, and donor-driven priorities. Furthermore, limited accountability mechanisms in recipient countries like Nigeria often lead to inefficient resource allocation and underperformance in targeted sectors. While ODA may indirectly support manufacturing by financing roads, power supply, or logistics, its direct impact on industrial output remains debatable.

Given the uncertain nature of its effects and the limited sector-specific focus in past literature, this study aims to assess the influence of ODA on Nigeria's manufacturing sector. Accordingly, the third hypothesis is articulated as follows:

H_{03}: Official development assistance has no significant effect on the growth of the manufacturing sector in Nigeria.

3. Methodology

This study adopts an ex post facto research design to investigate the impact of foreign capital inflows on Nigeria's manufacturing sector using secondary data sourced from the World Bank, CBN Statistical Bulletin, Nigerian Deposit Insurance Corporation, National Bureau of Statistics, and the Nigerian Stock Exchange, covering a thirty-five-year period from 1986 to 2020—a timeframe selected because it marks Nigeria's adoption of the Structural Adjustment Programme (SAP), alongside similar policy reforms in other ECOWAS countries aimed at liberalizing their economies. In line with time series econometric requirements, the Augmented Dickey-Fuller (ADF) test was applied to examine the stationarity properties of all variables, as non-stationary data can lead to spurious regression results; thereafter, a cointegration test was conducted to determine whether a long-run equilibrium relationship exists among the variables. Upon confirming cointegration, the study employed an Error Correction Model (ECM) to estimate both the short-run dynamics and long-run effects of foreign direct investment, foreign portfolio investment, and official development assistance on manufacturing output in Nigeria. The model specification builds on the works of Nkalu, Edeme, and Ifelunini (2016) and Adekunle *et al*. (2020) [3], with modifications tailored to suit the study's context, especially in terms of variable structure and econometric framework.

The implicit representation of the model is expressed as:

$$MSG = f(FDI, FPI, ODA - - - - - - - - - - - - (1)$$

The explicit form of the model in equation (1) is expressed as:

$$MSG = \beta_0 + \beta_1 FDI + \beta_2 FPI + \beta_3 ODA + \mu_t - - (2)$$

Where: MSG = Manufacturing Sector Growth, FDI = Foreign Direct Investment, FPI = Foreign Portfolio Investment, ODA= Official Development Assistance, μ_t = Error term.

Table 1: Measurement of Variables

Variable	Type	Measurement	Source
Manufacturing Sector Growth	Dependent	log of manufacturing sector output growth.	Eze, Nnaji and Kalu (2019)
Foreign Direct Investment (FDI)	Independent	Natural log of value of FDI of manufacturing sector throughout the period of the study	Sikandar *et al*., (2019); Eze, Nnaji and Kalu (2019); Ndubuisi and Abdul (2018)
Foreign Portfolio Investment	Independent	Natural log of value of FPI to manufacturing sector throughout the period of the study	Sikandar *et al*., (2019); Ndubuisi and Abdul (2018)
Official Development Assistance	Independent	Natural log of aggregate ODA to manufacturing sector throughout the period of the study	Sikandar *et al*., (2019); Ndubuisi and Abdul (2018)

***Source*:** Author's Compilation, 2022.

Results and Discussions

Table 2: Descriptive Statistics

	MSG	FDI	FPI	ODA
Mean	2.1864	3.3613	4.7086	2.6502
Median	2.8765	3.0121	3.9492	2.9101
Maximum	4.2009	8.8325	5.4258	3.5421
Minimum	3.8140	0.6426	2.2232	1.6439
Std. Dev.	2.0054	2.2081	1.3368	2.4303
Skewness	1.8654	1.8801	2.9769	2.5863
Kurtosis	2.5779	2.9775	2.2357	2.1707
Jargue-Bera	2.5674	2.4533	1.1046	2.2342
Probability	0.4653	0.5562	0.5126	0.3271
Observation	35	35	35	35

Researcher's Compilation using Eviews 9 (2022)

Table 2 presents the descriptive statistics of the variables used in the study over the 35-year period (1986–2020). The mean value of the logged manufacturing sector growth (MSG) is 2.1864 with a standard deviation of 2.0054, indicating a relatively stable growth trend with moderate dispersion. The minimum and maximum values for MSG are 3.8140 and 4.2009, respectively, suggesting slight variation in sectoral performance over the years. Foreign direct investment (FDI) exhibits a mean of 3.3613 and a standard deviation of 2.2081, reflecting significant variation in FDI inflows during the period, as supported by the minimum value of 0.6426 and the maximum of 8.8325. Foreign portfolio investment (FPI) recorded the highest mean among the capital inflow variables at 4.7086, with a relatively low standard deviation of 1.3368, indicating moderate volatility. The minimum and maximum FPI values are 2.2232 and 5.4258, respectively. Official development assistance (ODA) has a mean of 2.6502 and a standard deviation of 2.4303, implying considerable fluctuation in aid inflows; however, the minimum (1.6439) and maximum (3.5421) values are relatively close, suggesting less extreme variations.

Regarding the distributional properties, all variables are positively skewed, indicating that the distributions are right-tailed. The kurtosis values for MSG, FDI, FPI, and ODA are all below 3, suggesting platykurtic distributions, which are flatter than the normal distribution. The Jarque-Bera statistics for all variables are statistically insignificant at the 5% level, as indicated by probability values greater than 0.05. This implies that the null hypothesis of normal distribution cannot be rejected, and the data series can be considered approximately normally distributed—an important assumption for subsequent econometric analysis.

Table 3: Unit Root Test: Augmented Dickey-Fuller Test (ADF)

Variables	LevelT-Stat	Critical Value @ 5%	First Difference T-Stat	Critical Value @ 5%	Order of Integration
MSG	-0.5773	-3.3737	-4.3332	-1.4334	I (1)
FDI	3.5523	-1.8203	-4.6682	-3.5626	I (1)
FPI	-1.3772`	-2.9511	-2.6631	-1.57231	I (1)
ODA	1.1221	1.0032	-2.3222	-1.3222	I (1)

Source: Authors Compilation using Eviews (2022).
Note: The summary statistics were computed before taking the natural logs

The result of the unit root test found first differenced stationarity order across all series in the data set. The study proceeded to estimate the *two-step* Engle and Granger error correction estimation procedure to gradually adjust from the long run converging characteristics of the variables to the short-run equilibrating position. The error correction model thwarts long-run convergence in the parameterisation of the variables for short-run gradual equilibrium (Engle & Granger, 2015). The error correction model to be estimated is specified below;

$$\Delta MSG_t = \varphi_0 + \sum_{j-0}^{x} \varphi_{li} \Delta MSG_{t-j} + \sum_{j-0}^{x} \varphi_{2i} \Delta FDI_{t-j} + \sum_{k-0}^{y} \varphi_{3i} \Delta FPI_{t-k} + \sum_{i-0}^{z} \varphi_{4i} \Delta ODA_{t-j} + \varphi \aleph ECM_{t-1} + \mathfrak{H}_t - - - - -$$

All other variables remained as earlier defined except $ECM(-1)$which is the error correction component of the model that gradually adjust frontal long-run convergence to short-run equilibrating conditions and $\aleph$ is the coefficient of the error correction component that gives the speed of adjustment back to short term equilibrium.

Optimal Lag Length Selection

Error correction modelling procedure is sensitive to lag length because of the time-varying parameters of the model adjustment. The relied on the Akaike Information Criteria to choose the optimal lag length for the Manufacturing sector growth model. The information criteria with the lowest statistics in the corresponding lag-order selection gives the optimal.

Table 4: Optimal Lag Length Selection

Lag length	AIC
0	4.7838
1	2.5622*

Source: Authors Compilation Using Eviews (2021)
Notes * indicates lag order selected by the criterion

Lag length one (1) is optimal based on result presented in Table 4 the study proceeded to establish cointegrating level and short-run elasticities.

Cointegration Test

Cointegration is the statistical implication of the existence of a long-run relationship between economic variables. The test stipulates that if variables are integrated of the same order, a linear combination of the variables will be integrated of that same order. The study drew inferences at 5% in the face and Maximum Eigen Values Statistics.

Table 5: Result of Johansen Co-integration test based on Trace Statistic and Max Eigen value

	Trace Statistics					Max. Eigen Value	
No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0,05 Critical Value**	**Prob.**	**Max-Eigen Value**	**Critical Value**	**Prob.**
None *	0.74	138.42	95.75	0.00*	44.52	40.10	0.01*
At most 1 *	0.69	93.91	69.82	0.00*	38.61	33.88	0.01*
At most 2*	0.53	55.29	47.86	0.01*	25.50	27.58	0.04*
At most 3*	0.42	29.80	29.80	0.05*	18.17	21.13	0.03*

Source: Authors Compilation using EVIEWS (2022)
Notes: Trace test indicates 4 cointegrating eqn(s) at the 5% level; Max-eigenvalue test indicates 5 cointegration at the 5% level; * rejection of the hypothesis at the 5% level; **MacKinnon-Haug-Michelis (1999) p-values

The study confirmed the existence of a long-run relationship since it rejected the null of no cointegration. The study proceeded to estimate the two-step Engle and Granger estimation procedure.

Two-Step Engle and Granger Error Correction Result

The hypotheses were tested using the Two-Step Engle and Granger Error Correction**.** Engle-Granger methodology follows two-step estimations. The first step generates the residuals and the second step employs generated residuals to estimate a regression of first- differenced residuals on lagged residuals. Hence, any possible error from the first step will be carried into second. The Two-Step Engle and Granger Error Correction Result for this study is presented in table 6.

Table 6: Two-Step Engle and Granger Error Correction Result
DEP.VAR.: MSGt

Variable	Coefficient	t-Statistic	Prob.
A	0.1440	2.7373	0.0001**
FDI	0.5662	3.6372	0.0432*
FPI	0.6895	2.7237	0.0167*
ODA	-0.4591	-1.0983	0.3014
$ECM(-1)$	-0.5672	-2.9273	0.0014*
R-squared		0.7162	
Adjusted R^2		0.5129	
F-statistic		45.2321	
Prob(F-statistic)		0.0000**	
Durbin-Watson stat		2.0544	

Source: Author's computation using Eviews 9, (2022)
**(1%) *(5%) indicates significance levels

Table 6 presents the results of the two-step Engle and Granger error correction estimation procedure, with manufacturing sector growth (MSG) as the dependent variable. The coefficient of the error correction term (ECM_{t-1}) is –0.5672 and is statistically significant at the 1% level (p = 0.0014), suggesting a robust correction mechanism. The negative sign and statistical significance confirm that deviations from the long-run equilibrium are corrected over time, with approximately 56.72% of the disequilibrium adjusted in the current period. This indicates a relatively fast speed of convergence toward equilibrium in the manufacturing sector following short-run shocks.

The short-run dynamics show that foreign direct investment (FDI) has a positive and statistically significant effect on manufacturing sector growth, with a coefficient of 0.5662 (p = 0.0432). This implies that a 1% increase in FDI inflows is associated with approximately a 56.62% increase in manufacturing output, holding other factors constant. This result supports the rejection of the null hypothesis H_{01}, which posits that FDI has no significant effect on manufacturing sector growth in Nigeria.

Similarly, foreign portfolio investment (FPI) also demonstrates a positive and significant effect on manufacturing sector growth, with a coefficient of 0.6895 (p = 0.0167). This suggests that a 1% increase in FPI inflows is associated with a 68.95% increase in manufacturing output, and thus, the null hypothesis H_{02}, which states that FPI has no significant impact on the manufacturing sector, is rejected.

In contrast, official development assistance (ODA) was found to have a negative but statistically insignificant relationship with manufacturing growth (coefficient = –0.4591; p = 0.3014). This implies that ODA does not exert any meaningful influence on the sector during the period under review. Accordingly, the study fails to reject the null hypothesis H_{03}, which states that ODA has no significant effect on manufacturing sector growth in Nigeria.

The overall model performance is strong. The adjusted R^2 value of 0.5129 indicates that approximately 51.29% of the variation in manufacturing sector growth is explained by the included explanatory variables, while the remaining 48.71% is due to other factors not captured in the model. The F-statistic (45.2321) is statistically significant at the 1% level ($p < 0.01$), confirming the joint significance of the model parameters. Additionally, the Durbin-Watson statistic of 2.0544 falls within the acceptable range (1.5–2.5), indicating that the model is free from autocorrelation issues.

Granger Causality Test

In gauging the causation lag order of the capital inflow-industrial output relationship, the study regressed the dependent variable "MSGt" on its own one period lag and the one-period lag of the regressors. The study also, tested the null hypothesis of joint zero coefficients in the lagged regressors. By inference, failure to reject the null is equivalent to failure to reject the hypothesis that one-period lag of the regressors do not Granger cause manufacturing sector growth in Nigeria. To test the non-Granger causality from $FDIt$, FPIt and $ODAt$ to MSGt, the study tested the nullity of all coefficients, βv, βm and βw. The pairwise Granger Causality test results are given in Table 7.

Table 7: Granger Causality Result

Null hypothesis: X does not Granger Cause Y	F-Statistics	Probability
MSGt→$FDIt$	1.4526	0.1238
$FDIt$→MSGt	4.5623	0.0004**
MSGt→$ODAt$	2.9213	0.5366
$ODAt$→MSGt	2.6782	0.3521
MSGt→FPIt	0.6342	0.9882
FPIt→MSGt	2.8821	0.0234*

Source: Authors Computation using Eviews 9 (2022)
**(1%) *(5%) indicates significance levels

The result in Table 7 indicated that there is unidirectional causality from FDI and foreign portfolio investment to the

growth of manufacturing sector in Nigeria. Hence, FDI and foreign portfolio investment granger causes manufacturing sector growth in Nigeria.

Table 8: Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.5262	Prob. F (7,24)	0.2312
Obs*R-squared	2.6263	Prob. Chi-Square (7)	0.4552

Source: Authors Computation using Eviews 9 (2022)

Given the probability value of 45.52 per cent, the study failed to reject the null hypothesis and conclude that the short-run model is free from problems of serial correlation.

Table 9: Breusch-Pagan-Godfrey Heteroscedasticity Test:

F-statistic	0.565126	Prob. F (7,24)	0.5357
Obs*R-squared	10.75370	Prob. Chi-Square (7)	0.9273

Source: Authors Computation using Eviews 9 (2021)

Given the probability value of 92.73 per cent, the study failed to reject the null hypothesis and conclude that our short-run model is free from problems of heteroskedasticity.

Conclusion and Recommendation

This study relied on aggregate indices of capital inflows (FDI, foreign portfolio investment and official development assistance) and manufacturing sector growth from 1986 through 2020 to lend empirical credence to the relationship. The study relied on the *two-step* Engle and Granger estimation procedure to establish a baseline asymptotic relationship between capital inflow and manufacturing sector growth in Nigeria. The study found that, a percentage increase in foreign direct investment will result to increase in the growth of the manufacturing sector in Nigeria. Also, a percentage increase in portfolio investment will result to increase in manufacturing sector growth in Nigeria. Conversely, official development assistance was found not to statistically determine manufacturing sector output growth in Nigeria at any level of significance. This implies that official development assistance does not predict variations in manufacturing sector growth in Nigeria. Basically, official development assistance is an anathema to manufacturing sector output growth in Nigeria, mainly owing to the unproductive role remittances plays in the African space. Remittances are mainly used for consumption which in pure form does not generate a return in itself. Development assistance is usually mismanaged owing mainly to the political motives that are associated.

Based on the findings, the following recommendations were made:

- The Nigerian government should see inflows of foreign capital as a viable catalyst that can propel the expansion of the country`s manufacturing sector and as such strive to improve on the monetary policies such inflation, taxes, as well as reduce the conditions for foreign direct investment in Nigeria.
- The policymakers in the economy should embark on policy measures such as reduced taxes and increased incentives that will ensure the sustainability of foreign direct investment inflows and external debt towards the direction of manufacturing sector in Nigeria.
- In the same vein, a more significant percentage of official remittances inflow should be tailored towards the manufacturing sector in the country.

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