Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

FINANCIAL SECTOR DEVELOPMENT AND MANUFACTURING SECTOR PERFORMANCE IN NIGERIA

[1]Samson, Ufuoma Elizabeth, [2]Professor Peter C. Egbon

[1]Department of Economics, Delta State University, Abraka, Delta State, Nigeria
[2]Professor, Department of Economics, Delta State University, Abraka, Delta State, Nigeria

ABSTRACT

The Financial Sector of an economy is the livewire that provides support for other productive sectors such as the manufacturing sector. No nation can survive without a well-developed financial sector. Nigeria's financial sector is yet to fulfil its full potentials but to achieve this, the sector needs to be well-deepened. The review of both theoretical and empirical literatures provided a basis for the framework for the research methodology. Using an ex-post facto research design, the study made use of quantitative and statistical tools such as the Vector Error Correction (VEC) model. The data for the study was sourced from the Central Bank of Nigeria's statistical bulletin and spans the period between 1987 and 2021. The optimal lag selection criteria indicated the second period lag as the appropriate lag order to be used for the study. From the findings of the model estimation and analysis, it was discovered that employment impacts positively on manufacturing sector output. It was also seen that financial sector development variables impact the manufacturing sector positively both in the long and short-runs, however deposit liability and credit to private sector had negative impacts on manufacturing output. In light of the findings, the study recommends among others that the government through the appropriate financial management and regulatory authorities should initiate and encourage policies that would enhance the development of the financial sector such as facilitating access to credit and encouraging stock market participation.

KEYWORDS: *Financial Sector Development, Manufacturing Sector, Vector Error Correction*

1. INTRODUCTION

The growth and development of every economy depends on the performance of various sectors of the economy. An important sector that contributes towards economic growth and development is the financial sector. Development of the financial sector enhances efficient access to financial services and products. Developments in the financial sector enable the flow of funds, which drives consumption and investment, thereby increasing employment, lifting individuals out of poverty, and thus improving economic performance (Tchamyou & Asongu, 2017).

Financial sector development is central to economic growth and development (Levine, 1997; Park & Mercado, 2015). It is believed that financial development can have a positive impact on employment if there are clear channels or linkages to output sector. Okun (1969) posits that positive relationship exists between output and employment. The relationships between financial development and economic growth have been discussed extensively in the literature (Ductor & Grechyna, 2015); the need to contribute to the scanty literature on financial sector and manufacturing sector performance motivated this work. Theoretically, studies have shown that there is a positive relationship between financial sector and output (Levine, 2005).

One of the most important sectors of an economy in the world is the financial sector. As noted by Adeyefa and Obamuyi (2018), financial deepening is an all-inclusive process which concentrates the interface of primary markets, secondary markets and retail market, instruments (deposits, bonds, loans, debt securities and foreign exchange).

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

Economic theory expects a deepened financial system to expand the level and rate of growth of output which does not exclude manufacturing output. The world has generally perceived the manufacturing sector (as a subset of the industrial sector) to be the primary force that drives the modern economy in both developed and developing countries. Hence, the industry is often described by economists as the hub of every economy of the world. In Nigeria, the manufacturing sector has underperformed. Manufacturing sector output which accounted for about 19.9% of the gross domestic product in 1986 and 20.12% in 1994 fell drastically to 7.05% in 2008 and 11.64% in 2019. Overall, the manufacturing sector could not account for over 20% of Nigeria's GDP during the period under study. The poor performance of this sector in Nigeria is linked to a lack of adequate support from the financial industry (Mesagan, Olunkwa & Yusuf, 2018). This link is necessitated by the fact that the financial sector provides the funds needed for investment. It has been observed that a well-functioning financial industry increases economic efficiency, investment and growth as it plays an essential role of intermediation by redirecting funds from savers to investors, thereby releasing funds in the process for cost-effective manufacturing activities.

With domestic investment serving as a channel through which financial sector deepening impacts on manufacturing output, the effectiveness of the transmission mechanism has been questioned. Is domestic investment the best channel of transmission between financial sector deepening and growth of manufacturing output in Nigeria? Does financial sector deepening have a direct link with manufacturing output growth? What effect does financial sector deepening have on manufacturing output growth in Nigeria?

In light of the foregoing, the broad objective of this study is to investigate the impact of financial development on output of the manufacturing sector in Nigeria. The study specifically seeks to:

i. Examine the trend of financial development indicators and manufacturing sector output in Nigeria
ii. Examine if there is a long-run relationship between financial development and manufacturing output in Nigeria
iii. Investigate the direction of causality between manufacturing output and financial development in Nigeria.
iv. Highlight policy implications of the findings from this study.

2.LITERATURE REVIEW

This section will deal with the review of relevant theoretical and empirical literature that are related to this study. On theoretical perspective the link between financial sector and the real sector has been established in the endogenous growth model (see Benciverga *et al*, 1995; Levine, 2005). Besides, concerning the role of financial development on the manufacturing sector, researchers have studied the comparative importance of bank-based and market based financial systems (see Demirguç-Kunt and Maksimovic, 2002; Beck and Levine, 2004). The endogenous growth model can be used to explain the path in advancing the real sector to promote growth on a long run basis. The growth model is central to investment and services like risk diversification, savings mobilization and liquidity generation offered by financial intermediaries. According to Ghali (1999) endogenous growth model proposes that through these services there is an implied positive relationship between financial intermediation and economic growth. Impact of reforms in the model can occur as the result of government intervention which can either worsen off or improve the financial institutions (Schumpeter, 1911 and Ghali 1999). The theoretical framework for this study is thus built on the standard model of growth (AK endogenous growth model). The model takes the form of:

$$Y = AK \quad (1)$$

In the AK endogenous growth model, the production function is assumed not to exhibit diminishing returns to scale in the process of the growth system. The positive spillover from investment on capital is given as rationale for the return to scale. In equation 1 above, Y is the output, A is the level of technology and K is the capital. Also, in the model it is assumed that A>0. To determine the level of output per capita we have

$$y = Ak \quad (2)$$

Equation two is divided by the population (N) log (in order to express per capita). Then k is output per capita, and y is the output/income per capita. Using the transitional dynamics of Solow-Swan model, we have:

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

$$\gamma K = \frac{k}{k} = \frac{s.f(k)}{k} - (n + \delta) \quad (3)$$

Substituting the level of technology into equation 3, we have

$$\gamma K = sA - (n + \delta) \quad (4)$$

In equation 4, if $sA > (n + \delta)$, then $\gamma K > 0$

Finally, the per capita can be given as

$$y^* - sA - (n + \delta) \quad (5)$$

In the model above, technology shows a positive long run per capita growth which depends on the saving rate and population. It can be deduced that there is a positive relationship between output and capital which shows that outside the steady state, variation in investment rate (source of capital through financial sector) and variation in the output sector (including manufacturing sector) are positively related.

Empirical Literature Review

Adeyefa and Obamuyi (2018) investigated the effect of financial deepening on the performance of manufacturing firms in Nigeria from 1970 to 2016 using data sourced from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics. The model was specified, and the hypotheses were tested with the Autoregressive Distributed Lag model and Mann-Whitney U Test test. The Augmented Dickey-Fuller, Phillips-Perron and Breusch-Pagan-Godfrey tests were carried out to ensure robust regression results. Results obtained from the study revealed that broad money supply has direct and significant impact on index of manufacturing production in Nigeria, credit to private sector has indirect and insignificant impact on index of manufacturing production in Nigeria and market capitalization has an indirect and significant impact on index of manufacturing production in the long-run and a direct and insignificant impact in the short-run.

Olunkwa and Yusuf (2018) investigated financial development and manufacturing performance in Nigeria from 1981 to 2015. Three indicators of manufacturing performance such as manufacturing capacity utilization, manufacturing output and manufacturing value added were employed as the dependent variables while money supply as a percentage of GDP, domestic credit to the private sector and liquidity ratio were employed to proxy financial development. Three models were formulated for the study. Unit root, Johansen cointegration test and error correction model was employed in analyzing the data. The result indicates that money supply and credit to the private sector positively but insignificantly enhanced capacity utilization and output, but negatively impacted value added of the manufacturing sector in the short run. There is slight improvement in the long run where both money supply and credit to private sector exert positive impact on manufactured output. In contrast to these identified existing literatures, this study examines the effect of financial sector reforms on the growth of the manufacturing sector in Nigeria with the aim of providing a lasting solution to the unemployment problem.

Campbell (2022) examined the impact of financial reforms on the output growth of the manufacturing sector in Nigeria using descriptive statistics and Vector Autoregressive Model (VAR). The results indicate a short run divergence between variables. It was found that Nigeria experienced increase in Gross Domestic Product (GDP) with minimal contribution from the manufacturing sector. This is to say that the increase in GDP does not translate to the development of the manufacturing sector which could have helped to reduce the unemployment problem in the country. The findings indicate that while the financial sector performed better post-reform, the growth of the manufacturing sector remained low, necessitating a thorough review of financial reforms to reinforce the sector's performance and stimulate economic growth.

Nkoro and Uko (2022) employed cointegration/Error Correction Mechanism (ECM) with annual dataset covering the period, 1980-2021 to empirically examine the financial sector development-economic growth nexus in Nigeria. In

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

doing this, five variables namely; ratios of broad money stock to GDP, private sector credit to GDP, market capitalization-GDP, banks deposit liability to GDP and Prime interest rate were used to proxy financial sector development while real gross domestic product proxy growth. The empirical results show that there is a positive effect of financial sector development on economic growth in Nigeria. However, credits to private sector and financial sector depth are ineffective and fail to accelerate growth. This signifies the effect of government borrowings, the problem of huge non-performing loans, and a deficient legal system on the private sector. These inefficiently and severely limit the contribution of Nigeria's financial sector development to economic growth.

Epor, Yua and Nwakoby (2023)'s study sought to examine the effect of fiscal policy and private investment on the performance of the manufacturing sector in Nigeria from 1981 to 2021. The study was time series in nature and made use of the autoregressive distributed lag (ARDL) modelling technique. It was found that domestic private investment and aggregate government spending exert a significant positive influence on the manufacturing sector performance in the long run, while the influence from tax and government revenue was significantly negative. It was then recommended that government should improve on the factors that attract more FDI inflows into the country; boosts requisite educational training skills and financial market depth to drive the influence of domestic private investment on the manufacturing sector; increase government spending on the manufacturing sector development; and that tax revenues be judiciously utilized in the long-run so that they can positively impact the manufacturing sector.

3. METHODOLOGY

The design adopted for this study is the ex-post facto design. This design is employed in this study because the study is descriptive and quantitative in nature. This study therefore requires the use of more advanced statistical tools and will be making use of the Vector Error Correction Model (VECM) technique as the main tool for estimation of the model. The study adopts time series data from 1987 to 2021. The data were obtained from the publications of the Central Bank of Nigeria Statistical Bulletin, Annual Reports and Statement of Accounts, National Bureau of Statistics, World Development Indicators and other academic Journals.

The financial development indicators considered in this study are market capitalization, broad money stock, credit to private sector, prime interest rate and deposit liability. The manufacturing performance indicators considered are output and employment in the sector. Therefore, the functional form equation can be modified as:

$$MGDP = f(MEMP, FMI, MCP, FCP, FPI, FDL) \quad (6)$$

In equation 6, MGDP and MEMP represent output and employment in manufacturing sector respectively. MCP represents the market capitalization to GDP ratio; FMI represents the broad money stock to GDP; FCP represents the credit to private sector to GDP ratio; FPI represents prime interest rate; FDL represents deposit liability to GDP ratio. Positive relationship is expected between the independent variables and dependent variable, except from the interest rate.

4. RESULTS AND DISCUSSION OF FINDINGS

This section will consider the analysis and presentation of results. We begin by considering the trend analysis below.

Lag Selection Criteria

Before proceeding to further analysis, we perform the lag selection using optimal lag selection criteria. lag selection criteria are used to determine the appropriate number of lags to include in a vector error correction model (VECM). The number of lags is an important parameter to select because including too few or too many lags can result in a biased model. The table below shows the result of the lag structure.

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

Table 4.1Optimal Lag Selection

VAR Lag Order Selection Criteria
Endogenous variables: MGDP MEMP FMI MCP FCP FPI FDL
Exogenous variables: C
Sample: 1987 2021

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-737.8626	NA	9.51e+10	45.14319	45.46063	45.25000
1	-546.0667	290.5998	17764053	36.48889	39.02842*	37.34337
2	-483.2871	68.48690*	11885037*	35.65376*	40.41538	37.25590*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: Author's Computation using E-views

This table above shows the lag order selection criteria for a vector model such as the vector error correction model. The model has 7 endogenous variables: MGDP, MEMP, FMI, MCP, FCP, FPI, and FDL, and 1 exogenous variable: C. Three different criteria are used to select the lag order of the VAR model: LR (sequential modified LR test statistic), FPE (final prediction error), and information criteria including AIC (Akaike information criterion), SC (Schwarz information criterion), and HQ (Hannan-Quinn information criterion). The table shows the results of these criteria for lag orders 0, 1, and 2. The log-likelihood (LogL) is also reported for each lag order. The selected lag order by each criterion is marked with an asterisk (*). In this case, the criteria suggest different lag orders however, the most acceptable result is one with the lowest value, which is lag order 2 (35.65376) which is suggested by the AIC criterion. Having determined our optimal lag, we proceed to carry out the co-integration test.

Johansen Co-integration Test

To determine the long-run relationship of the variables, the Johansen co-integration test with a two-period lag is used and the results are presented in the table below. It is also important to note that the variables were logged so as to minimize the difference in magnitude between the variables.

Table 4.2 Johansen Co-integration Test

No. of co-integrating equation	**Trace Statistic**		**Maximum Eigen Value**	
	Trace Statistic	**P-Value****	**Max-EigenStatistic**	**P-Value****
None *	182.2956	0.0000	69.20388	0.0000
At most 1 *	113.0917	0.0019	34.91346	0.1703
At most 2 *	78.17827	0.0092	31.46993	0.0943
At most 3 *	46.70834	0.0638	24.22725	0.1270
At most 4	22.48109	0.2725	14.51304	0.3245
At most 5	7.968046	0.4688	6.725090	0.5221
At most 6	1.242956	0.2649	1.242956	0.2649

** denotes rejection of the hypothesis at the 0.05 level*
***MacKinnon-Haug-Michelis (1999) p-values*

Source: Author's Computation

The trace and maximum eigen value tests produced the same result in that they both rejected the Johansen co-integration null hypothesis that there is no co-integrating relationship between the variables, additionally, both the trace and max-eigen tests indicate that there are up to three cointegrating equations at 5% significance level. This

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

implies that there is relationship between the variables in the long run. Having established this long-run relationship, the vector error correction model can be estimated.

4.3 Vector Error Correction Model (VECM)

Using a two-period lag, the VECM model was estimated and this helps us to observe both the short-run and long-run dynamics of the co-integrated series. The result is summarized in the tables thus:

Table 4.3 Long-Run VECM Output

Variables	LNMGDP	LNMEMP	LNFMI	LNMCP	LNFCP	LNFPI	LNFDL
Coefficients					-	-	
	1.000000	13.87133	2.892613	2.671644	5.967757	4.653773	2.178518
Standard Error		(3.01969)	(2.01035)	(0.37150)	(1.12579)	(0.50286)	(1.3747)
t-statistics		4.594	1.439	7.191	-5.301	-9.255	1.537

Source: Author's Computation

The above output shows the estimated long-run equilibrium relationship among the variables in the system, based on a vector error correction model (VECM) analysis. The cointegrating equation output in the table indicates the combination of values of the variables that result in a stationary relationship or a long-term equilibrium among them. In this case, the equation suggests that LNMGDP (manufacturing sector output) is cointegrated with the other variables in the system, and its coefficient is fixed at 1. The other variables, namely LNMEMP (employment), LNFMI (broad money to GDP ratio), LNMCP (market capitalization to GDP ratio), LNFCP (credit to private sector to GDP ratio), LNFPI (prime interest rate), and LNFDL (deposit liability to GDP ratio), are also part of the cointegrating relationship, with coefficients of 13.87133, 2.892613, 2.671644, -5.967757, -4.653773, and 2.178518, respectively. In other words, using the rule-of-thumb for t-tests, it can be seen that LNMEMP and LNMCP have a positive and statistically significant impact on manufacturing sector output in the long-run while LNFMI and LNFDL have positive impacts in the long-run but not statistically significant. LNFCP and LNFPI are seen to have negative and statistically significant impacts on manufacturing sector output in the long-run.

The short run dynamics are shown below and from the results gotten from the system equation, we focus on the one that has manufacturing output (LNMGDP) as the target variable. This is shown in the table below.

Table 4.4 Short Run VECM Output

Dependent Variable: D(LNMGDP)
Method: (Gauss-Newton / Marquardt steps)
Sample (adjusted): 1990 2021
Included observations: 32 after adjustments

	Coefficient	Std. Error	t-Statistic	Prob.
ECT(-1)	-0.192442	0.029839	-6.449120	0.0000
D(LNMGDP(-1))	1.072567	0.312755	3.429417	0.0034
D(LNMEMP)	0.910703	0.391170	2.328134	0.0399
D(LNMEMP(-1))	-0.676932	0.108107	-6.261660	0.0000
D(LNFMI)	4.455283	1.345219	3.311938	0.0016
D(LNFMI(-1))	0.316687	0.281706	1.124174	0.2775
D(LNMCP)	1.921956	0.315724	6.087466	0.0000
D(LNMCP(-1))	0.488970	0.099123	4.932920	0.0001
D(LNFCP)	-0.001472	0.849536	-0.001733	0.9715
D(LNFCP(-1))	0.094830	0.182362	0.520007	0.6102
D(LNFPI)	-0.191788	0.038471	-4.985261	0.0001
D(LNFPI(-1))	-0.021580	0.116177	-0.185747	0.8550
D(LNFDL)	-3.494252	1.000645	-3.491999	0.0042
D(LNFDL(-1))	-0.262169	0.023408	-11.19973	0.0000
C	0.066971	0.041896	1.598489	0.1295

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

R-squared	0.707083	Mean dependent var	0.181957
Adjusted R-squared	0.432474	S.D. dependent var	0.124640
S.E. of regression	0.093897	Akaike info criterion	-1.586388
Sum squared resid	0.141066	Schwarz criterion	-0.853520
Log likelihood	41.38221	Hannan-Quinn criter.	-1.343463
F-statistic	12.57487	Durbin-Watson stat	2.432626
Prob(F-statistic)	0.000090		

Source: Author's Computation

The above result shows the short run dynamics from the vector error correction model. From the table, it can be seen that the error correction term is negative and statistically significant and the speed of adjustment of -0.192442 implies that any disequilibrium in maritime sector output is corrected at a speed of 19.24% each year. From the coefficients of the variables, first the current effects show that employment (LNMEMP) has a positive and significant impact on manufacturing output as a unit increase in employment causes manufacturing output to increase by 0.910703 unit. Broad money to GDP ratio (LNFMI) has a positive and significant impact on manufacturing output as a unit increase in LNFMI causes output to increase by 4.455283 units. Market capitalization to GDP ratio (LNMCP) also impacts manufacturing sector output positively and significantly in the short run as a unit increase in LNMCP will cause output to increase by 1.921956 units.

Credit to private sector to GDP ratio (LNFCP) has a negative but not statistically significant impact on manufacturing sector output as a unit increase in LNFCP causes a 0.001472 decrease in MGDP. Prime interest rate (LNFPI) impacts output negatively and significantly as a unit increase in LNFPI will cause output to fall by 0.191788 unit. Likewise, deposit liability to GDP ratio (LNFDL) has a negative and statistically significant impact on output as a unit increase in LNFDL causes manufacturing output to decrease by 3.494252 units. The coefficient of lagged difference of the dependent variable, manufacturing sector output (MGDP) show that the one period lagged values of LNMGDP has a positive impact on the current value of LNMGDP. Specifically, a one-unit increase in D(LNMGDP(-1)) leads to a 1.072567 unit increase in LNMGDP in the current period and it is statistically significant.

The coefficients of the lagged differences of the other exogenous variables show their impact on MGDP. For example, an increase in the one period lags of employment, prime interest rate and deposit liability impacts negatively on manufacturing sector output in the current period while a unit increase in the one period lagged values of broad money ratio to GDP, market capitalization ratio to GDP and credit to private sector ratio to GDP have positive impacts on manufacturing sector output in the current period. In terms of statistical significance for the lagged variables, employment, market capitalization and deposit liability are statistically significant in their one period lags while broad money, credit to private sector and prime interest rate are not statistically significant. The model has a good fit as indicated by the R-squared value of 0.707083. This implies that about 71% of the systematic changes in manufacturing output are explained by both the current period and one period lag values of MEMP (employment), FMI (broad money to GDP ratio), MCP (market capitalization to GDP ratio), FCP (credit to private sector to GDP ratio), FPI (prime interest rate), and FDL (deposit liability to GDP ratio) while about 29% are captured by the error term. The adjusted R-squared value of about 43% shows the model's average predictive power. The F-statistic of 12.574870 is statistically significant at the 5% level, suggesting that the model is overall significant. The Durbin-Watson statistic of 2.432626 is close to 2, indicating that there may not be autocorrelation present in the model and this will be statistically determined using appropriate diagnostic tests. The AIC, BIC, and HQC values are low indicating that the model is a good fit.

Model Diagnostics

Having seen the results, diagnostic checks on the model will be carried out such as tests for serial correlation and heteroskedasticity.

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

Table 4.5 Breusch-Godfrey Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.116864	Prob. F(2,14)	0.8906
Obs*R-squared	0.525463	Prob. Chi-Square(2)	0.7689

Source: Author's computation

The Breusch-Godfrey test of serial correlation is based on the null hypothesis that there is no serial correlation at up to 2 lags. From the above result, it can be seen that the p-value of the F-statistic is 89.06% which is above the 5% level of significance, thus we cannot reject the Breusch-Godfrey test null hypothesis which states that "there is no serial correlation". This affirms the absence of serial correlation. The next test is the heteroskedasticity test which is presented in table 4.8 below.

Table 4.6 Breusch-Pagan-Godfrey Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	1.066148	Prob. F(21,10)	0.4798
Obs*R-squared	22.12014	Prob. Chi-Square(21)	0.3926
Scaled explained SS	8.429350	Prob. Chi-Square(21)	0.9930

Source: Author's computation

The above test of heteroskedasticity is based on the null hypothesis that the error variances are equal (Homoskedasticity). From the above result, it can be seen that both the p-values of the F-statistic, observed R-squared and scaled explained sum of squares (SS) are 47.98%, 39.26% and 99.30% respectively which are well above the 5% level of significance, thus we cannot reject the test's null hypothesis. This implies that the error variances are equal which means there is no heteroskedasticity.

Discussion of Findings

From the optimal lag test done, the most suitable lag period was 2 and this is what was used for the co-integration and vector error correction model. The Johansen co-integration test result revealed that the variables are co-integrated, implying that a long-run relationship exists between MGDP (manufacturing sector output), MEMP (employment), FMI (broad money to GDP ratio), MCP (market capitalization to GDP ratio), FCP (credit to private sector to GDP ratio), FPI (prime interest rate), and FDL (deposit liability to GDP ratio), this is in line with the findings of Asaleye et al. (2018). From the vector error correction model (VECM) that was estimated in the previous section, there are short run and long run dynamics. First, the long run dynamics shows that employment in the manufacturing sector impacts positively on manufacturing sector output in the long-run. This is in line with the findings of Andabai and Eze, (2018). Given that the short run impact of employment on output is positive, it means that such level of employment in the manufacturing sector needs to be sustained to avoid a negative effect on output in the long-run. Thus, all sectors of the economy are important and must work as a system to guarantee sustained output growth in the long run. Financial development ratios such as FMI, MCP and FDL have positive impacts on manufacturing sector output in the long run. This is in line with findings from Han and Shen (2015), Topcu and Coban (2017) and Okon and Nathan, 2014). These ratios highlight the level of financial deepening and development present in an economy and from the result, the more the financial sector is developed, the higher the manufacturing sector output in the Nigerian economy.

Moving on to the short-run dynamics of the VEC model, Manufacturing sector employment also has a positive and significant impact on output in the short-run. Lawal (2018) also made similar observation in his study. In the short run

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

also, financial sector development variables also impacted on manufacturing sector output. Broad money to GDP ratio (FMI) has positive impacts on manufacturing sector output and this impact is statistically significant. Adeyefa and Obamuyi (2018) also made findings that are in line with this. Other financial sector variables such as market capitalization to GDP ratio and deposit liability to GDP ratio also impacted manufacturing sector output positively and significantly in the short-run.

Policy Implications of the Major Findings

Based on the above findings, the following policy implications can be drawn:

Given the positive impact of financial development on manufacturing sector output in both the short and long run, policymakers should focus on enhancing financial sector development. This can be achieved through measures such as improving access to credit for businesses, encouraging investment in the stock market, and fostering a conducive environment for financial institutions.

Although employment in the manufacturing sector has a positive impact on output in the short run, policymakers should consider implementing strategies to enhance productivity and automation in the manufacturing sector, such as promoting technological advancements, upskilling the workforce, and fostering innovation. Additionally, policies should aim to diversify the economy and create employment opportunities in other sectors to reduce the reliance on manufacturing. While the findings focus on the specific relationship between financial variables and manufacturing sector output, policymakers should consider the broader macroeconomic context when formulating policies. It is important to align these findings with other economic indicators, such as inflation, exchange rates, fiscal policy, and overall economic stability.

5. RECOMMENDATIONS, CONCLUSION AND CONTRIBUTION TO KNOWLEDGE

This study has examined financial sector development and manufacturing performance in Nigeria between the period of 1987- 2021. This period was chosen based on availability of data. Five indicators are used to proxy financial development and they include market capitalization, broad money stock, credit to private sector, prime interest rate and deposit liability. Also used are two indicators to proxy Manufacturing performance and they include manufacturing output and employment.

Recommendations

Based on the findings and policy implications mentioned in the previous chapter, the following specific policy recommendations can be derived:

i. Enhance financial sector development and create regulations and policies that support a stable and transparent financial system, including measures to prevent fraud and enhance investor protection, as well as promoting competition among financial institutions.
ii. Address employment dynamics by promoting technological advancements, upskilling the workforce and also encourage innovation and entrepreneurship.
iii. Consider the overall macroeconomic context through holistic policy coordination, ensuring coordination among different policy areas, including fiscal, monetary, and trade policies in order to create a supportive environment for manufacturing sector growth, taking into account the interdependencies and trade-offs between various economic indicators.
iv. Continuously monitor the impact of policies and regularly evaluate their effectiveness, making adjustments as needed to align with changing economic conditions and priorities.

Contribution to Knowledge

This study provides a novel and nuanced viewpoint to the current body of knowledge. Through the application of temporal analysis, an extensive understanding of the interplay between Nigeria's financial and manufacturing sectors was found, particularly in terms of how their interdependent relationship facilitates a simultaneous enhancement in both employment generation and manufacturing output growth. By discerning the nuanced impacts of specific financial development indices on manufacturing output, the research was able to shed more light on the dynamic mechanisms driving growth through the manufacturing sector. Furthermore, the identification of a bidirectional

causality between employment and manufacturing growth offers a fresh perspective on the simultaneous enhancement of job creation and industrial productivity.

REFERENCES

1. *Tchamyou, V. & Asongu, S. (2017). Information Sharing and Financial Sector Development in Africa, Journal of African Business, 18, issue 1, p. 24-49, https://EconPapers.repec.org/RePEc:taf:wjabxx:v:18:y:2017:i:1:p:24-49.*
2. *Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. Journal of Economic Literature, 35(2), 688-726*
3. *Park, C., & Mercado, Jr., R. V. (2015). Financial Inclusion, Poverty, and Income Inequality in Developing Asia (ADB Economics Working Paper Series (No. 426).*
4. *Okun, A. M. (1969). Potential GNP: Its Measurement and Significance. In Proceedings of the Business and Economics Statistics Section, American Statistical Association (pp. 98-103). Washington D.C.: American Statistical Association.*
5. *Ductor, L., & Grechvna, D. (2015). Financial development, real sector and economic growth. International Review of Economics and Finance, 37, 393-405.*
6. *Levine, R. (2005). Finance and Growth: Theory and Evidence. In P. Aghion & S. Durlauf (Eds.), Handbook of Economic Growth Part 1 (pp. 865-934). Amsterdam: North-Holland Elsevier Publishers.*
7. *Adeyefa F. A, & Obamuyi T. M (2018). Financial Deepening and the Performance of Manufacturing Firms in Nigeria. Canadian Social Science, 14(6), 87-96.*
8. *Mesagan, E., Olunkwa N., & Yusuf I., (2018). Financial development and manufacturing performance: The Nigerian case. Studies in Business and Economics, 13(1); 98-111.*
9. *Bencivenga, V. R., & Bruce, D. S. (1991). Financial Intermediation and Endogenous Growth. Review of Economic Studies, 58, 195-209.*
10. *Beck, T., & Levine, R. (2004). Finance and the sources of growth, Journal of Financial Economics, Volume 58, Issues 1–2, 261-300.*
11. *Schumpeter, J. A. (1911). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle. Transaction Publishers.*
12. *Ghali, K. (1999). The performance of the Nigerian manufacturing sector: A 52-year analysis of growth and retrogression (1960–1997). Journal of Asian Business Strategy, 2(8), 177-191.*
13. *Olunkwa, I. A., & Yusuf, A. A., (2018). Effect of financial sector development on manufacturing output growth in Nigeria (1986-2012): A vector autoregressive approach. Journal of Applied Economics and Business Research JAEBR, 5(1): 38-55.*
14. *Campbell, O. & Asaleye, A. J. (2016). Financial sector reforms and output growth in manufacturing, Empirical evidence from Nigeria. American International Journal of Contemporary Research, 6(3): 10. Central Bank of Nigeria (2018). Statistical Bulletin. Abuja: Nigeria.*
15. *Nkoro, S. H. & Uko, D.T. (2022). The Impact of Financial Development on Manufacturing Output in Sub-Saharan Africa. Journal of African Economics, 27(3), 315-332.*
16. *Epor, P., Yua, M., Nakorby, G. (2023). Finance and Manufacturing: A Study of Interactions. Journal of Economic Behavior & Organization, 142, 11-25.*
17. *Asaleye, J. A., Adama, J. I. & Ogunjobi, J. O. (2018). The financial sector and manufacturing sector performance, Evidence from Nigeria. Investment Management and Financial Innovations, 15(3): 35-48. Available: http://dx.doi.org/10.21511/imfi.15(3).2018.03.*
18. *Andabai, P. W., & Eze, G. P., (2018). Bank credit and manufacturing sector growth in Nigeria (1990-2016): A Causality Investigation, International Journal of Economics, Commerce and Management, VI(3), 326-336.*
19. *Han, J. & Shen, Y., (2015) Financial development and total factor productivity growth: Evidence from China, Emerging Markets Finance and Trade, 51:S261-S274, DOI: 10.1080/1540496X.2014.998928*
20. *Topcu, M., & Coban, S., (2017). Financial development and firm growth in Turkish manufacturing industry: Evidence from heterogeneous panel based non-causality test. Economic Research-EkonomskaIstraživanja, 30:1, 1758-1769, DOI:10.1080/1331677X.2017.1383179.*
21. *Okon, E. B., & Nathan, E., (2014). Commercial bank credits and industrial subsector's growth in Nigeria. Journal of Economics and Sustainable Development, 5(10), 1- 12.*