



Nigeria's Economic Tapestry: The Interplay Of Financial Deepening And Manufacturing Performance

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ABSTRACT

The study titled “Nigeria’s economic tapestry: the interplay of financial deepening and manufacturing performance” investigates the impact of financial deepening on the performance of Nigerian manufacturing sector from 1981 to 2021. The study employed time series data sourced from CBN statistical bulletin and using ARDL model to analyze the data. The empirical results indicate that there is a negative but significant relationship between manufacturing sector performance and credit to private sector, there is a positive and significant relationship between manufacturing sector performance and broad money supply and there is a negative and insignificant relationship between manufacturing sector performance and stock market capitalization. On the basis of the findings of this study, the following recommendations are made: Address infrastructural limitations and regulatory issues to enhance the positive impact of increased credit availability on manufacturing; Mitigate challenges related to infrastructural limitations and economic instability to optimize the positive effects of changes in money supply on aggregate demand and Evaluate and address potential factors such as political instability or global economic conditions that may overshadow the anticipated positive impact of a growing stock market on manufacturing output.

Keywords: Financial deepening, Broad Money Supply, Stock Market Capitalization

INTRODUCTION

Ademola and Marshal (2018) posit that industrialization plays a pivotal role in steering the modern economy, both in developed and developing nations. Typically, the industrial/manufacturing sector acts as the primary driver for the production of goods and services, job creation, and income augmentation in most economies. Consequently, it is often characterized as the core of any thriving economy. Regrettably, Nigeria stands apart from this trend, with the contribution of the secondary sector (comprising manufacturing, building, and construction) to the overall gross domestic product (GDP) being notably weak when compared to other sectors in the country. Historically, the manufacturing sector has been hailed as a catalyst for economic growth, a remedy for poverty and unemployment, and a source of wealth creation.

The resurgence of financial deepening within the realm of financial institutions has positively impacted various sectors in an economy, including the manufacturing sector. Financial deepening is recognized as a crucial element, and a well-established financial sector has the potential to mobilize domestic savings and facilitate investment, thereby contributing to increased output growth (Charles and Benson, 2023).

In Nigeria, various policies aimed at enhancing manufacturing sector productivity and overall economic growth have been implemented over the years. These include Development Plans, the Structural Adjustment Programme (SAP), and Financial Sector Reforms in 1986. However, the effectiveness of these initiatives has been limited. The First Development Plan (1962-1968) focused on import-substituting industrialization, but the reliance on imported raw materials hampered productivity. Subsequent plans faced challenges such as a lack of technical know-how and the impact of global economic recessions.

The introduction of SAP in 1986 aimed to restructure and diversify the economy, particularly the manufacturing sector. Financial reforms were implemented to deepen the financial system, enabling manufacturing firms to access funds for production. Despite these efforts, the manufacturing sector's contribution to the GDP remained comparatively weak, leading to the realization that previous developmental plans had not achieved their objectives.

Financial deepening, characterized by an increased supply of financial assets and a developed financial sector, is crucial for economic growth. The role of finance in fostering industrial sector development has been debated, with varying perspectives on its impact on productivity and growth. While some argue that financial deepening can lead to positive outcomes such as increased investments and efficiency, others caution against potential negative consequences like financial market inefficiency and increased fragility.

In Nigeria, the manufacturing sector is seen as a key player in economic recovery and post-Covid-19 planning, accounting for a significant proportion of economic activities and employment. However, challenges persist, including macroeconomic instability and a weak financial system. The question arises: Can financial deepening promote industrial sector growth and, by extension, the manufacturing sub-sector through increased fund mobilization? The debate continues, with different viewpoints on the potential benefits and risks associated with financial deepening.

This study seeks to navigate the complexities of Nigeria's manufacturing sector, examining the historical context of policy interventions and the ongoing discourse on financial deepening. The persistent challenges faced by the manufacturing sector underscore the critical need for innovative solutions. This study seeks not only to contribute to academic discourse but also to offer insights that may inform practical initiatives to bolster the resilience and productivity of the manufacturing sector in Nigeria.

From the foregoing the study seeks to achieve the following objectives:

- i. To examine the impact of private sector credit GDP ratio on the manufacturing sector performance
- ii. To determine the impact of broad money supply GDP ratio on the manufacturing sector performance and
- iii. To examine the impact of stock market capitalization GDP ratio on the manufacturing sector performance in Nigeria.

The following hypotheses have been formulated based on the objectives of study;

- H₀₁:** There is no significance relationship between credit to private sector GDP ratio and manufacturing sector performance in Nigeria.
- H₀₂:** Broad money supply GDP ratio has no significance effect on manufacturing sector performance in Nigeria.
- H₀₃:** Stock market capitalization GDP ratio and manufacturing sector performance are not related in Nigeria.

LITERATURE REVIEW

Conceptual Framework

Conceptual Clarification

Financial deepening, as described by Ohwofasa & Aiyedogbon (2013), involves enhancing the supply of financial services across all sectors of the economy, particularly by increasing the ratio of money supply to Gross Domestic Product (GDP). Sackey & Nkrumah (2012) emphasize that a higher amount of liquid money in the economy creates more opportunities for sustained growth.

This comprehensive process includes the modification of financial services at all levels in the economy and the increase in the supply of money relative to GDP and other price indices. Ademola & Marshal (2018) note that financial deepening encompasses primary markets, secondary markets, retail markets, and involves various instruments and stakeholders such as companies, banks, and deposit-taking institutions.

Conceptually, deepening the financial system means easing its functioning, allowing participants to engage in financial markets for savings and investment decisions. This enables markets to deploy capital without significant asset price movements, creating a broad menu of assets for risk diversification. In essence, a deepened market provides opportunities for savers and borrowers to invest in various risk-sharing and risk management instruments (Goswami & Sharma, 2011).

It is widely recognized that a higher degree of financial development leads to a broader availability of financial services, allowing for the diversification of financing risks. The level of financial services in a country, as argued by Patrick (1966), depends on the country's level of financial development, contributing to long-run economic growth and per capita income.

Financial Deepening and Productivity

Nzotta and Okereke (2009) articulate three perspectives on the relationship between financial development and economic growth: the supply-leading hypothesis, demand-following hypothesis, and bi-directional causality. The supply-leading hypothesis suggests a positive impact of financial development on economic growth, implying that financial development influences the level of development in an economy. The demand-following hypothesis posits that finance responds to changes in the real sector, with variations in the stock of financial assets being a function of growth in the real sector. The bi-directional causality hypothesis claims a mutual impact of finance and growth.

Contrasting Keynes' (1936) idea that injecting money into the economy through increased government expenditure leads to full employment, McKinnon (1973) and Shaw (1973) present a rival hypothesis. They argue for a positive relationship between interest rates and financial deepening, suggesting that developing countries with repressed economies and restrictions on interest rates may face limitations on growth. This viewpoint challenges the notion that increased government expenditure necessarily promotes investments.

Financial Deepening and the Manufacturing Sector

This review explores the intricate relationship between financial deepening and the manufacturing sector in Nigeria, shedding light on the dynamics, challenges, and potential synergies that define their interplay. As Nigeria endeavors to diversify its economy and reduce dependence on oil revenues, understanding the role of a deepened financial sector in supporting manufacturing becomes imperative.

Financial Deepening:

Numerous studies affirm the transformative potential of financial deepening, emphasizing its role in fostering economic growth and stability (Nwosu, C. P., Itodo, I. A., and Ogbonnaya-Orji, N, 2021). A well-developed financial system is an important driver of economic growth due to its role in mobilizing savings, promoting information sharing, boosting the efficiency of resource allocation, and facilitating the management and diversification of risk, thereby spurring real sector growth (Levine, 1997). The general belief is that a more developed financial system is more stable, and therefore, "less fragile". This is based on the fact that deep and liquid financial systems, with varied instruments tend to absorb more shocks than a shallow one (Sahay et al., 2015). The expansion and sophistication of financial services, encompassing the size and diversity of financial institutions, have been noted as pivotal in mobilizing capital, mitigating risks, and promoting efficient resource allocation. Nigeria's pursuit of financial deepening, marked by regulatory reforms and technological innovations, aligns with global trends that recognize the centrality of a robust financial system in facilitating economic development.

Manufacturing Sector in Nigeria:

The manufacturing sector in Nigeria occupies a critical position in the discourse of economic diversification. Historically reliant on oil exports, Nigeria faces the imperative of enhancing the competitiveness of its manufacturing sector to achieve sustainable economic growth. Literature underscores the sector's potential for job creation, value addition, and technology transfer. However, persistent challenges such as infrastructure deficiencies, high energy costs, and limited access to finance have impeded the sector's optimal performance.

Synergy and Impacts:

Scholarly works elucidate the potential synergies between financial deepening and the manufacturing sector in Nigeria. Access to a diversified set of financial instruments and services is identified as a catalyst for overcoming the capital constraints faced by manufacturers. Research indicates that an expanded financial system can empower businesses within the manufacturing sector, enabling them to invest in technological advancements, improve operational efficiency, and enhance global competitiveness.

Moreover, literature emphasizes the role of financial deepening in fostering innovation and entrepreneurship within the manufacturing landscape. Access to venture capital and equity financing emerges as a critical factor in propelling innovation, creating employment opportunities, and contributing to the development of a skilled workforce—a crucial component in Nigeria's broader economic diversification agenda.

Theoretical Framework

The Supply Leading Hypothesis

The supply-leading hypothesis, pioneered by scholars like McKinnon (1973) and Cole and Shaw (1974), posits that financial deepening in an economy triggers an upswing in industrial output and productivity. In contrast, the demand-following hypothesis suggests that the growth of the industrial sector stimulates the development of modern financial institutions, financial assets and liabilities, related services, and the overall financial deepening index (Patrick, 1966). This alternative model proposes that the expansion of the manufacturing sector itself induces an increased demand for financial services (Ogbuagu, Olunkwa & Ogunniyi, 2021).

McKinnon (1973) and Shaw (1973) theorized that liberalizing interest rates in developing countries leads to higher real interest rates, subsequently boosting savings, fostering investments, and eventually driving economic growth. Their framework focused on addressing financial repression, advocating for the removal of interest rate ceilings, credit controls, and other restrictive financial legislations to alleviate market distortions.

According to Rehman and Gill (2013), McKinnon's hypothesis underscores that an increase in the desired rate of capital accumulation leads to a rise in the need for real cash balancing holding for accumulation purposes. Money is seen not as a competing asset but as a conduit through which accumulation occurs in developing countries. Shaw (1973) introduced the "debt-intermediation hypothesis," asserting that financial liberalization and development increase incentives to save and invest, stimulate investment through an expanded supply of credit, and enhance overall efficiency in investment.

McKinnon–Shaw (1973) views financial liberalization as encompassing market-determined interest rates, easier entry into the banking sector, elimination of directed credit programs, reduced fiscal dependence on state credit, integration of formal and informal markets, and movement towards flexible exchange rate regimes. The argument is that these measures facilitate a more competitive and expansive financial sector, ultimately promoting growth.

Fry (1995) identified prerequisites for successful financial liberalization, including prudential supervision of commercial banks, price stability, fiscal discipline, profit-maximizing competitive behavior by banks, and a non-discriminatory tax system. However, these prerequisites hinge on the assumption of perfect information and perfect competition (Arestis and Demetriades, 1999).

Demand - Following Hypothesis.

The demand-following perspective on financial market development posits that the emergence of these markets is a delayed response to economic growth, where growth generates a demand for financial products. Consequently, early attempts to develop financial markets might be deemed inefficient, with resources potentially better allocated to more immediate needs during the early stages of economic growth. As the economy progresses, an escalating demand for financial services arises, ultimately leading to increased financial development. Some researchers argue that economic growth acts as a causal factor for financial development. In their view, the expanding real sector triggers a heightened demand for financial services, thereby stimulating the financial sector. This perspective asserts that financial deepening is essentially an outcome or by-product of growth in the tangible aspects of the economy, a notion recently revitalized by Ireland (1994). According to this alternative standpoint, any evolution in financial markets is merely a passive response to a growing economy.

Moreover, the bi-directional causality hypothesis suggests that financial deepening and the growth of the manufacturing sector are interdependent, with each influencing the other. In this scenario, financial deepening not only gradually induces growth in manufacturing output but also fosters feedback loops that contribute to the continued strengthening of financial system depth (Al-Naif, 2012). On the contrary, the neoclassical model has served as the cornerstone of recent growth theories. According to this model, in a steady-state equilibrium, per capita income is determined by prevailing technology, rates of saving, population growth, and technical progress—variables assumed to be exogenous (Barro and Sala-iMartins, 1995). As these rates vary among countries, the Solow-Swan model predicts differing impacts on per capita income based on varying saving rates and population growth rates. Holding other factors constant, countries with higher saving rates are likely to have higher per capita incomes, and vice versa.

Empirical Review

Volumes of literature are available, and among this empirical literature reviewed include Ojonget al. (2017) examined the relationship between financial deepening and manufacturing sector growth in Nigeria from 1985 to 2014 using the OLS multiple regression technique. Findings from the study reveals that an indirect and insignificant relationship exists between financial development and the contributions of manufacturing sector to GDP.

Mesagan and Olunkwa (2018) investigates the relationship between financial sector development and manufacturing performance in Nigeria from 1981 to 2015, using a classical least square regression with three indicators; manufacturing capacity utilization, manufacturing output and manufacturing value added as proxy manufacturing performance while money supply as a percentage of GDP, domestic credit to the private sector and liquidity ratio were employed as proxy for financial development. The study revealed that credit to the private sector and money supply have insignificantly positive impact on capacity utilization and output, but negatively impacted value added of the manufacturing sector in the short run, with slight improvement in the long where both money supply and credit to private sector exert positive impact manufactured output.

Adeyefa and Obamuyi (2018) investigated the effect of financial deepening on manufacturing firms' performance in Nigeria using ARDL technique. The results obtained revealed that broad money supply has direct impact on manufacturing output; while credit to private sector has negative impact on manufacturing performance. Also, market capitalization exerted negative and positive effects in the short- and long-run periods, respectively. The study recommended that the government should focus on expanding financial reforms targeted at enhancing credit accessibility to the manufacturing sector, as well as ensuring adequate implementation and monitoring of existing policies on financial reforms in Nigeria.

More recently, Kayode, Owoputi & Nwakoby (2020) investigated the effect of financial deepening on manufacturing firms' productivity in Nigeria from 1986 to 2017, used data sourced from the Central Bank of Nigeria and National Bureau of Statistics. Autoregressive Distributed Lag model was employed to produce the parameter estimates. The validity of the results was examined using Breusch-Godfrey Serial Correlation and Breusch-Pagan-Godfrey heteroscedasticity tests. The findings reveal that financial deepening cointegrate, and has a significant negative effect on the index of manufacturing production in Nigeria. The major implication of this finding is that financial deepening has significant negative effect on manufacturing sector productivity in Nigeria. Egbuche,

Austin & Leonard (2020) investigated the effect of financial deepening on manufacturing sector output in Nigeria between 1981 and 2018. The variables were the performance of manufacturing sector output as the dependent variable, while, money supply as a ratio of GDP and credit to private sector as a ratio of GDP as the independent variables. The study employed unit root test, to determine the stationarity of the variables, co-integration approach to determine the long run equilibrium relationship of the variables and Error Correction Model (ECM) to determine the speed of adjustment. The further test carried out in this study were serial correlation, hetroscedasticity and normality test. Ordinary Least Square (OLS) method of data analysis was adopted. From the model it was concluded that financial deepening has a positive significant effect on the performance of manufacturing sector out.

Ogbuagu, Olunkwa & Ogunniyi (2021) examine the relationship between financial deepening and industrial sector performance in Nigeria from 1980 to 2018. They relied on the Auto regressive Distributed Lagged (ARDL) technique, and data obtained from the World Bank Development indicators (WDI) to established their position of findings that financial deepening index exerts a positive impact on industrial sector growth. Also, financial deepening threshold of 36.8% is required to spur industrial sector output to its equilibrium steady-state, beyond which industrial growth declines. Furthermore, the Granger causality test supports the bi-directional hypothesis.

Tabash, Afolabi, Adelakun, & Astuwa (2022) assessed the advantageous effects of financial deepening on sectoral (agriculture and manufacturing) advancement in Nigeria. They used the proxies of broad money (M2) to GDP ratio, and the ratio of credits to private sector to GDP for financial deepening. The data regarding time series were retrieved from Thomson Reuters Data Stream and Augmented Dickey-Fuller unit

root test and Johansen co integration approaches used for the long-oriented effects and Error Correction approach for short orientation estimation.

The impact of financial deepening was positive and statistically significant in explaining agricultural growth, but the performance of the manufacturing sector was not significantly impacted in the reviewed period, hence government should make efforts to reduce the interest rate on loan bestowed to the private sector.

RESEARCH METHODOLOGY

Research Design

The research design adopted in this study falls within the paradigm of an Ex-post facto design type. The reason is that the events observed, in this case the determinants of financial deepening and manufacturing performance in Nigeria. Hence, the study is intended to review and evaluate the ratios of broad money supply and GDP, credit facility to private sector and GDP, stock market capitalization and GDP, and official exchange rate of the domestic currency per capita income, with the view to ascertaining their effectiveness, and making possible recommendations for improvement to make the economy of the country more effective. To this end, regression models which seeks to explain these relationships will be formulated through foundational theories and empirical studies to cover for the period 1982-2022.

Nature and Sources of Data

Statistically we have three types of data in research; pool/panel data, cross sectional, and time series data. In this research study we employed time series data for the analysis with secondary sources. The secondary data were source from the Central Bank of Nigeria Statistical Bulletin, World Bank International Financial Statistics and National Bureau of Statistics. These sources were believed in providing reliable data relating to the Nigerian economy. The period under study is forty-two years from 1981 to 2022.

Theoretical Framework

The study employs the endogenous growth model with little modification or adjustment as the theoretical framework of the study with emphasis on the role of capital in promoting and sustaining growth of an economy at an initial level of endowment. The theory state that

$$Y = T^{\alpha} (K^{\alpha} L^{1-\alpha}) \dots\dots\dots 1$$

$$Y = TK^{\alpha}L^{1-\alpha} \dots\dots\dots 2$$

Taking the log of eqn. 2 to linearize the model results to

$$\text{Log}Y = \text{Log}T + \alpha\text{Log}K + 1-\alpha\text{Log}L \dots\dots\dots 3$$

Equation 3 is the linearize model measuring the impact of capital and labour on growth at an initial endowment of T. It is assumed that $0 < \alpha < 1$

Analytical Framework and Model Specification

This study is guided by the theoretical framework discussed in the previous section; we specify our model with reference to our specific objectives as follows.

The functional/mathematical model is given as

$$\text{MSP} = F(W, X, Z, \text{ER}) \dots\dots\dots 4$$

$$\text{MSP} = \alpha + \beta_1W + \beta_2X + \beta_3Z + \beta_4\text{ER} \dots\dots\dots 5$$

Where W is the ratio of credit to private and GDP

X is the ratio of broad money supply and GDP

Z is the ratio of stock market capitalization and GDP

ER is the nominal exchange rate of the domestic economy

α is the intercept of the model and β_i is vector of coefficient to be estimated

The a priori expectation of the model is $\alpha, \beta_i > 0$

The econometric model is given as

$$\text{MSP} = \alpha + \beta_1W + \beta_2X + \beta_3Z + \beta_4\text{ER} + \mu \dots\dots\dots 6$$

Where μ is the random/error term which addresses the effects of other variables on the sector performance other than financial deepening variables selected in the model. There is no gainsaying that not just the selected variables determine the total variation of the explained variable. The random term is assumed to be independently and identically distributed.

Method of Data Analysis

With reference to our objectives and model specification, the study adopts a multiple classical regression approach in analyzing the data with special reference to stationarity test due to the nature of secondary data. All variables will be tested to confirm the absence or presence of unit roots problems using both ADF (Augmented Dickey-Fuller) tests for the period in consideration. Also, co-integration test will be carried out to find out whether there is long run relationship between non-stationary variables.

Hypothesis Testing and Decision Rule Criteria

The decision rule was employed to test the hypothesis of the study and to make comparison between the probability value and the critical value. The study adopted 5% as its level of significance. The following decision rules were adopted for rejecting or accepting the null hypotheses: If,

- i. Probability value (p-value) > 0.05 critical value; do not reject the null hypothesis (H0i).
- ii. Probability value (p-value) < 0.05 critical value; reject the null hypothesis (H0i).

DATA PRESENTATION AND ANALYSIS

Descriptive Statistics

In this section, we present the collected data, analyze the result and discuss the result. The data for this research analysis as earlier stated were all sourced from the CBN statistical bulletin of 2021 volume. The annual data of Manufacturing sector output, ratio of money supply to GDP, ratio of credit to private sector to GDP, and ratio of stock market capitalization to GDP. The time series data ranges from 1981 to 2021.

Table 4.1: Unit root test results

Variables	ADF Statistics	CV 5%	1 st Diff. ADF	5% CV	O of I
MSP	-0.5379	-2.9390	-3.4264	-2.9458	I(1)
MSGDP	-0.8070	-2.9369	-5.7690	-2.9390	I(1)
CPSGDP	-0.7743	-2.9411	-5.8508	-2.9411	I(1)
SMCGDP	-1.5876	-2.9369	-6.1502	-2.9411	I(1)

Source: Author computation using E-view 9

The level unit root result show that all the computed ADF statistics are less than their corresponding 5% critical values, hence, not stationary and have unit root problem. However, the first difference of all the variables shows that their ADF statistics are greater than their corresponding 5% critical values, hence, stationary. The variable data integrated in order on I(1). For this reason, we by conventional econometrics the Johanson cointegration is the right method of analysis to be adopted. However, given the advantages of ARDL over the Johanson in terms of sample size in producing efficient estimate easily apply the ARDL to estimate the short-and long-term effects of financial deepening on the sector performance as shown in the table below, which display the bound test result on the existence of long-term relationship between financial deepening and manufacturing sector performance.

Table 4.2: Bound Test Result

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	1.21	3
Significance	I0 Bound	I1 Bound
5%	3.23	4.35

Source: Author's Computation

In this scenario the bound test result shows that the computed f-statistics of 1.21 is less than the I0 (3.23) bound of 5 percent critical level. In other word the computed f-statistics falls within the acceptance region, and as such the test is conclusive on the no long run relationship between the variables as established by Pesaran et al (2001). Thus, we accept the null hypothesis of no long run relationship and conclude that there is no long run relationship between financial deepening and manufacturing sector performance in Nigeria. This outcome fails the necessary condition of cointegration analysis; thus, we can only estimate the ARDL

model with a lag length alternatively selected to examine the causal relationship between financial deepening and the sector performance. And this is shown in table 4.3 below.

Table 4.3: ARDL Estimation on the relationship between MSP and Financial deepening

Dependent variable		LMSP		
Model selected		ARDL(2, 0, 0, 0)		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LMSP(-1)	1.484452	0.149640	9.920151	0.0000
LMSP(-2)	-0.482097	0.152906	-3.152898	0.0034
LMSGDP	0.486696	0.214030	2.273956	0.0296
LSMCGDP	-0.039211	0.067088	-0.584467	0.5629
LCPSGDP	-0.321546	0.159158	-2.020298	0.0515
C	-0.392740	0.255964	-1.534356	0.1345

Source: Author's Computation

$R^2 = 0.9971$

DW = 2.2960

F-Stats = 2307.576 (0.000)

The estimated model or equation shows the true relationship between financial deepening and manufacturing sector performance in Nigeria with a not significant negative intercept of -0.3927. Theoretically, the estimation doesn't confirm to theoretical postulation on the impact of financial deepening in exerting productivity in an economy. With only the ratio of money supply and GDP having positive effects while credit to private sector and market capitalization having a negative effect, this mixed effect calls for questioning. *Ceteris paribus* as measures towards the development of the financial sector is enhanced via deepening of financial services in the economy, it is expected that sectors witness some degree of productivity.

More so, the result reveal that previous performance level of the sector has positive effects on the current sector performance level. That a unit change in past years sector performance (LMSP (-1)) and MSGDP enhances manufacturing sector current performance level on the average by 1.4844 and 0.4867 respectively. While that of SMC GDP, CPSGDP and LMSP (-2) induces the manufacturing sector performance by -0.0392, -0.3215, and -0.4821 respectively.

Statistically, among the components of financial deepening the ratio of money supply to GDP and ratio of credit to private sector and GDP are significant at 5 percent level, which is not very encouraging. The coefficient of determination is 0.997 which shows that the estimated model has a good fit, and that the components of financial deepening are true determinants of the sector performance. The model is generally significant as reveal by the f-statistics with a probability value of 0.000. The Dubbin Watson statistics is good with no evidences of auto-correlation.

In order to further interrogate the result estimated we carry out some post estimation analysis which comprises of the serial correlation test and normality test, as explain below

Serial correlation test

F-statistic	1.7265	Prob. F(2,24)	0.1946
Obs*R-squared	3.9087	Prob. Chi-Square(2)	0.1417

The table above shows the result of the serial correlation test of the model residual. From the insignificance status of the computed f-statistics and chi-square, we conclude that there is no serial correlation and multicollinearity. And this result validated the null hypothesis that the regression line is efficient and consistent, which in turn affirm the Dubbin Watson statistics of no auto-correlation.

Normality and Stability Test

The test shows that the error is usually compared in the period under review and is scattered relative to the middle one and that the distribution of items is asymmetrical. The Jarque-Bera normality test with a value of 1.8921 and a probability value of 0.3883 indicates the validation of the null hypothesis that residual is normally distributed as specified in figure 1 below.

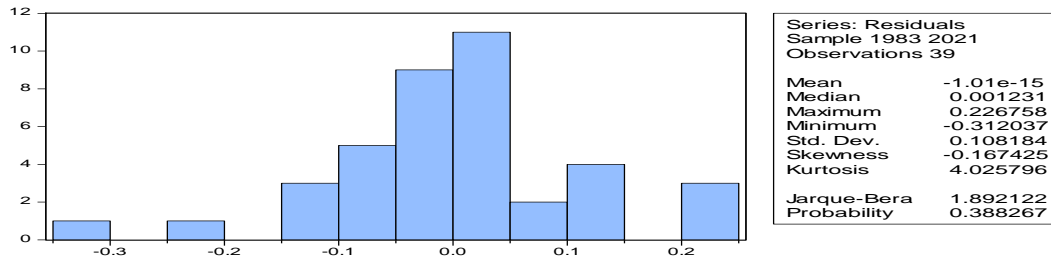


Figure 1: Jarque-Bera Normality Test

Hypotheses Testing

To test the hypotheses, we will use probability criteria, if:

$p > 0.05$: Accept H_0 .

$p < 0.05$: Reject H_0 .

Hypothesis one is restated below:

H_{01} : There is no significance relationship between credit to private sector GDP ratio and manufacturing sector performance in Nigeria.

Variable	Coefficient	t-statistics	Prob.	Decision
MSP	-0.321546	-2.020298	0.0515	Reject H_{01}

Source: Researcher

First of all, the result shows that there is a negative but significant relationship between MSP and CPSGDP (representative of the credit to private sector GDP) in Nigeria. The result means that a single unit increase in MSP leads to a negative decrease of -0.321546 units in manufacturing sector Output in Nigeria. Since the computed probability value of MSP (0.05) is equal to the critical test level of 0.05 (i.e., $P < 0.05$), we thus reject the null hypothesis and conclude that credit to private sector GDP has significant but negative impact on manufacturing sector value added in Nigeria.

Hypothesis two is restated below:

H_{02} : Broad money supply GDP ratio has no significance effect on manufacturing sector performance in Nigeria.

Variable	Coefficient	t-statistics	Prob.	Decision
MSP	0.486696	2.273956	0.0296	Reject H_{01}

Source: Researcher

First of all, the result shows that there is a positive and significant relationship between MSP and MSGDP (representative of Broad money supply GDP) in Nigeria. The result means that a single unit increase in MSGDP leads to a positive increase of 0.486696 units in manufacturing sector Output in Nigeria. Since the computed probability value of MSP (0.0296) is less than the critical test level of 0.05 (i.e., $P < 0.05$), we thus reject the null hypothesis and conclude that Broad money supply GDP has significant and positive impact on manufacturing sector value added in Nigeria.

Hypothesis three is restated below:

H_{03} : Stock market capitalization GDP ratio and manufacturing sector performance are not related in Nigeria.

Variable	Coefficient	t-statistics	Prob.	Decision
MSP	-0.039211	-0.584467	0.5629	Accept H_{01}

Source: Researcher

First of all, the result shows that there is a negative and insignificant relationship between MSP and SMCGDP (representative of stock market capitalization GDP) in Nigeria. The result means that a single unit increase in SMCGDP leads to a negative decrease of -0.039211 units in manufacturing sector Output in Nigeria. Since the computed probability value of MSP (0.5629) is higher than the critical test level of 0.05 (i.e., $P < 0.05$), we thus accept the null hypothesis and conclude that Stock market capitalization GDP ratio and manufacturing sector performance are not related in Nigeria.

DISCUSSION OF RESULTS

Effect of credit to private sector on manufacturing sector performance in Nigeria

The first objective of this study was to determine the effect of credit to private sector on manufacturing sector performance in Nigeria. The result shows that there is a negative but significant relationship between manufacturing sector performance and credit to private sector GDP) in Nigeria. The coefficient of credit to private sector is negative. Credit to private sector indicating a negative and significant relationship with manufacturing value added in the long run, conforms to economic theory in terms of the sign and the magnitude in terms of its significance makes economic sense. Generally, increased credit availability can stimulate investment and expansion in the manufacturing sector, leading to improved performance. However, challenges such as infrastructural limitations, regulatory issues, and economic instability can also impact outcomes. The negative relationship as stipulated by this study shows that there exist issues that needs to be addressed, because despite the negative relationship there still exist a significant effect of credit to the private sector on manufacturing sector performance. In-depth research or analysis specific to the current economic conditions in Nigeria would provide a more accurate understanding of this relationship.

Effect of Broad money supply on manufacturing sector performance in Nigeria

The next objective of this study was to determine the effect of broad money supply on manufacturing sector performance in Nigeria. The result shows that there is a there is a positive and significant relationship between manufacturing sector performance and broad money supply in Nigeria. The coefficient of broad money supply is positive. Broad money supply indicating a positive and significant relationship with manufacturing value added in the long run, conforms to economic theory in terms of the sign and the magnitude in terms of its significance makes economic sense. Generally, Changes in the money supply can influence aggregate demand, affecting the overall level of economic activity. An expansion in the money supply can increase consumer spending and business investment, leading to higher demand for manufactured goods. However, challenges such as infrastructural limitations, regulatory issues, and economic instability can also impact outcomes. This study is in line with the findings of Nwanne, 2014.

Effect of Stock market capitalization on manufacturing sector performance in Nigeria

From the findings, it was established that there is a negative and insignificant relationship between manufacturing sector performance in Nigeria. The result means that a single unit increase in MSP leads to a negative decrease of -0.321546 units in manufacturing sector Output in Nigeria. In other words, the data and analysis conducted did not find a significant association between these two variables, which suggests a negative and statistically insignificant relationship between stock market capitalization and manufacturing sector performance in Nigeria. A growing stock market can provide manufacturing firms with access to capital through equity financing. Higher stock market capitalization may make it easier for manufacturing companies to raise funds by issuing new shares, facilitating investment in expansion, research and development, and other productive activities, but based on our findings the reverse of this Apriori statement is observed which can be attributed to a number of reasons such as political instability or global economic conditions, might be overshadowing the impact of stock market capitalization on the manufacturing sector. In line with the above findings our results are in a diverse conclusion to the findings of Egbuche, 2020.

CONCLUSION

This study reveals intriguing dynamics. Firstly, there is a noteworthy negative relationship between manufacturing sector performance and credit to the private sector. Despite the negative correlation, increased credit availability exhibits a significant influence on manufacturing, emphasizing the need to address underlying issues such as infrastructural limitations and regulatory challenges. Additionally, the positive and significant association between manufacturing sector performance and broad money supply aligns with economic theory, underlining the potential impact of monetary factors on aggregate demand. However, challenges like infrastructural limitations and economic instability remain influential. Lastly, the unexpected negative and statistically insignificant relationship between stock market capitalization and manufacturing sector performance prompts further investigation, suggesting that political instability or global economic conditions may be overshadowing the anticipated positive impact on manufacturing output. These findings, at times diverging from prior research, emphasize the complexity of financial dynamics influencing the manufacturing sector in the Nigerian context.

RECOMMENDATIONS

On the basis of the findings of this study, the following recommendations are made.

- a) Address infrastructural limitations and regulatory issues to enhance the positive impact of increased credit availability on manufacturing.
- b) Mitigate challenges related to infrastructural limitations and economic instability to optimize the positive effects of changes in money supply on aggregate demand.
- c) Evaluate and address potential factors such as political instability or global economic conditions that may overshadow the anticipated positive impact of a growing stock market on manufacturing output.

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