

Investigating Bank Financing and the Financial Performance of Listed Manufacturing Companies in Nigeria

ABSTRACT

The interplay between the financial constraints and operational realities of manufacturing companies in Nigeria raises critical questions about the effectiveness of bank financing as a tool for enhancing the financial performance of the production companies in Nigeria. Specifically, the study examined the effects of maximum lending rate, bank credits and domestic money supply on the financial performance of listed industrial goods companies in Nigeria between 2014 and 2023. Descriptive and ex-post facto research designs were adopted. The study sample was the population of this study consisting of the 13 listed industrial goods companies in Nigeria using the census sampling method. Ordinary Least Square technique was employed to test the hypotheses. Findings showed that domestic money supply and banks credit have positive and significant influence on the return on assets. However, outcomes showed that maximum bank lending rate had positive but insignificant influence on ROA. The study recommends among others that banks and other financial institutions should increase the accessibility of credit to industrial goods companies. This can be achieved by developing tailored financial products that meet the specific needs of these companies, thereby supporting their operational and capital expenditure.

Keywords:

Bank financing, bank credit, domestic money supply, financial performance maximum lending rate, return on assets

1. INTRODUCTION

The study analyzed how bank financing affect the financial performance of publicly listed manufacturing firms in Nigeria. The banking sector's role through its financing is crucial, as it offers the essential support needed for the financial success of industrial goods firms in Nigeria (Zulai & Onipe, 2023). Banks offer supplementary services to companies and sectors, delivering settlement and payment solutions to industries, thereby aiding their transactions and improving their performance (Odeniran & Udeaja, 2020; Ariyo, 2020). Nigerian manufacturing firms have traditionally encountered considerable difficulties in obtaining funding, essential for their operational effectiveness, growth, and overall financial success. The restricted availability of bank funding, marked by elevated interest rates, strict collateral demands, and brief loan durations, has been recognized as a significant obstacle,

hindering the development and longevity of this sector (Owolabi & Adegbite, 2020; Gideon et al., 2021).

The Nigerian banking industry, despite its advancements and reforms over the years, shows a hesitant attitude towards lending to the manufacturing sector because of perceived risks, such as market instability, infrastructure gaps, and inconsistent policies. This predicament is intensified by global financial trends and economic unpredictabilities, which frequently prompt banks to prioritize short-term, high-return investments rather than long-term industrial loans (Obamuyi & Olorunfemi, 2021; Nguyen & Tran, 2023; Olokoyo et al., 2024). The interaction between these financial limitations and the operational conditions of manufacturing firms in Nigeria prompts important inquiries regarding the efficacy of bank financing as a means to improve the financial outcomes and growth path of the manufacturing industry. The changing economic policies, varying oil prices, and the effects of global economic trends require a thorough analysis of how banking policies, lending strategies, and financial support systems can be improved to enhance the manufacturing sector's role in the national economy (Akpan et al., 2016; Simon-Oke & Jolaosho, 2021; Boshnak, 2021). Interest rates charged by banks have remained high, making credit expensive for the manufacturing sector, particularly those engaged in capital intensive production processes. This has led to the folding up of manufacturing firms contributing to job losses and declining output. The challenge, therefore, has been the determination of the extent to which the cost of borrowing as reflected in the prevailing lending rates charged by banks influences the financial performance of industrial goods companies in Nigeria (Emecheta & Ibe 2021; Orinya et al., 2020; Tawose, 2022).

Furthermore, most studies emphasize general economic growth rather than the specific impact of bank financing on the manufacturing sector's financial performance. The manufacturing sector, being capital-intensive, faces unique challenges that require tailored investigations. For instance, Akinwale (2021) highlights the importance of lending rates but focuses on economic growth, leaving a gap in understanding the extent to which bank lending rates affect the financial performance of manufacturing companies in particular. Simon-Oke and Jolaosho (2021) argue that financial reforms have not significantly boosted manufacturing productivity, yet no specific examination of how bank credit mechanisms influence manufacturing firms' financial outcomes has been conducted. Studies like Senini et al. (2021) and Otalú and Keji (2020) focus on sectoral growth and determinants but do not evaluate the financial performance of individual manufacturing firms in relation to bank financing. High interest rates and stringent loan requirements, as mentioned by Ebi and Emmanuel (2020), are recurrent issues. However, there is little empirical analysis on how these factors specifically affect the profitability and growth of manufacturing firms.

Given the production industry's strategic significance in Nigeria's pursuit of long-term prosperity and diversified economies, it is imperative to investigate the subtleties of bank financing, evaluate the effects on financial performance of listed production companies in Nigeria. Specifically, the article examined the effects of maximum lending rate, bank credit and domestic money supply on the financial performance of listed manufacturing companies in Nigeria between 2014 and 2023. The adoption of the Basel III rules and regulations by Nigerian banks which placed an emphasis on stricter capital requirements and risk management procedures led to the choice of 2014 as the base year. These rules have an impact on banks' ability to lend, especially to capital-intensive industries like manufacturing. Examining the effects of these modifications sheds light on how companies' access to financing was affected by more stringent banking laws.

2. LITERATURE REVIEW

2.1 Theoretical Foundation

Theory of Bank-based financial System

The concept of a bank-based financial system was introduced by Joseph Stiglitz in 1985. This theory posits that financial intermediaries enhance the gathering of information about

industries, the extent to which creditors impose corporate control, the supply of risk-mitigating structures, and the mobilization of capital. This is a case supporting well-established banks. It is not, however, a point supporting a bank-centered financial system. The argument for a bank-centered system, in contrast, arises from a critique of markets' effectiveness in delivering financial services (Ajayi, 2020). An essential part of the industrialization process is the establishment of an independent financial system, which consists of specialized entities and institutions that manage payment transfers and facilitate the movement of savings and investments. Although every manufacturing society has a specialized financial system, comparing these systems reveals significant structural differences. A significant distinction lies in the extent to which financial systems are either bank-oriented or market-oriented (Akpan et al., 2016).

Moyo et al. (2014) contends that because well-functioning markets rapidly disclose information to investors broadly, it discourages individual investors from investing significant time and resources into researching companies. A fundamental free-rider issue exists. This issue is not as critical in bank-centered systems because banks can invest without promptly disclosing their choices in public markets. Additionally, markets are a poor tool for enforcing corporate control since insiders likely possess more information regarding the corporation than external parties. This informational imbalance reduces the potential success of takeovers because it is less probable that poorly informed outsiders will successfully outbid comparatively well-informed insiders for control of companies (Jhingan, 2012).

In reality, bank-based financial systems are significantly more equipped than market-based systems to tackle agency issues and short-term thinking. In banking systems, the majority of financial assets and liabilities comprise bank deposits and direct loans. In market-oriented systems, tradable securities in financial markets represent the primary type of financial assets. Bank-based systems seem to hold an advantage in offering a long-term stable financial structure for industries. In contrast, markets are generally more volatile but can more rapidly direct funds to emerging companies in expanding sectors (Nneka, 2012).

This research is based on a bank-oriented financial system since the theory highlights the beneficial roles of banks in manufacturing sector expansion, suggesting that banks can fund manufacturing growth more efficiently than markets in developing economies. Moreover, in the context of state-owned banks, market failures can be addressed, and savings allocation can be managed strategically. Therefore, banks are able to make manufacturing investments without disclosing their choices right away in public markets, which encourages them to investigate firms, managers, and market conditions, positively impacting resource allocation and growth. Moreover, the theory emphasizes that influential banks with strong ties to industries are more successful in pressuring companies to repay their debts compared to fragmented markets.

2.2 Empirical Review

Akinwale (2021) demonstrated a notable connection between lower bank lending rates and economic growth in Nigeria. The results indicate that lower bank lending rates promote growth, underscoring the significance of advantageous credit conditions for boosting economic productivity. Senini et al. (2021) showed a negative long-term connection between investments in the manufacturing sector and growth, indicating that current manufacturing performance relies on past investments. This emphasizes the significance of strategic investments for maintaining manufacturing growth in emerging economies. Simon-Oke and Jolaosho (2021) discovered that financial reforms have not markedly enhanced manufacturing productivity in Nigeria. They highlighted the necessity for specific reforms designed to establish advantageous lending environments and grants to enhance the sector's impact on GDP. Otalú and Keji (2020) recognized crucial factors influencing manufacturing growth, including capital, labor, and exchange rates. They emphasized that these factors significantly impact manufacturing output over the long term, with stable exchange rates and strong labor and capital inputs being essential.

Ebi and Emmanuel (2020) determined that the credit from commercial banks positively impacts the outputs of the manufacturing sub-sector in Nigeria. Their results indicate that a rise in credit distribution to manufacturing can stimulate growth and total output, even in the face of elevated interest rates and exchange rate difficulties. Emecheta and Ibe (2021) confirmed a notable positive link between bank lending to the private sector and economic development. Their results highlight the importance of credit availability in improving economic performance. Akoja (2020) underscored the difficulties encountered by SMEs in obtaining funding, pointing out concerns like limited entrepreneurial skills and untrustworthy financial information sources. These limitations impede the development and industrial advancement of the SME sector. Nnanna (2024) emphasized the vital importance of industrialization for economic advancement, pointing out that underdeveloped manufacturing sectors hinder substantial growth. Gbadebo et al. (2017) as well as Amel et al. (2022) investigated financial development in different contexts, demonstrating a positive correlation between financial structures and economic growth, highlighting the significance of financial systems in promoting development.

3. MATERIAL AND METHODS

Ex-post facto research designs were adopted in the study. It is because the data needed for analysis already exist and it enables exploring relationships between two or more variables (Creswell & Poth, 2018). The population for this study consisted of the 13 listed industrial goods companies in Nigeria. The sample size was the population size consisting of listed industrial goods companies on the Nigerian Exchange Group (NXGs). The sampling technique was the census sampling method. Secondary data on banks credit, maximum lending rate, domestic money supply and return on assets between 2014 and 2023 (10 years) were retrieved from Central Bank of Nigeria statistical bulletin and audited annual report and financial statements of selected listed industrial goods companies in Nigeria. Ordinary Least Square technique i.e. regression analysis was adopted to obtain interpretable findings. Fully modified ordinary least square was adopted for estimating the research model.

Model Specification

The following mathematical model was developed to analyze the effect of banks financing mechanisms on the financial performance of listed industrial goods companies in Nigeria. Maximum lending rate, domestic money supply and banks total credits (Toby & Peterside, 2020; Uzomba et al., 2024) are used as the independent variables and regressed against the dependent variable, return on assets (Maniruzzaman & Hossain, 2019). Firm size and leverage (Abdou et al., 2020) are used as the control variables.

This study employed the following model specified as shown below.

$$Y_{it} = \alpha_{it} + \beta_1 MLR_t + \beta_2 DMS_t + \beta_3 BTC_t + \beta_4 FSz_{it} + \beta_4 Lev_{it} + \varepsilon_{it} \dots \dots \dots 3.1$$

Where “Y” represents financial performance of industrial goods companies in Nigeria and measured by return on assets. In this study, the models were modified as follows:

$$ROA_{it} = f(MLR, DMS, BTC, FSz, Lev) \dots \dots \dots 3.2$$

$$ROA_{it} = \alpha_{it} + \beta_1 MLR_t + \beta_2 DMS_t + \beta_3 BTC_t + \beta_4 FSz_{it} + \beta_4 Lev_{it} + \varepsilon_{it} \dots \dots \dots 3.3$$

α = the constant term

MBLR = Maximum Lending Rate

DMS = Domestic Money Supply

BTC = Banks total credit

FSz = Firm Size

Lev = Leverage

ROA = Return on assets

β = the coefficient of the function

e = error term.

3. RESULTS AND DISCUSSION

Descriptive Analysis

Table 1 Descriptive Statistics

	Bank credit	Domestic money supply	Firm size	Maximum lending rate	leverage	Return on assets
Mean	7.85392	7.48008	6.509757	23.57400	0.178957	0.024145
Skewness	0.337244	0.144893	0.190784	0.431148	2.145545	2.771388
Kurtosis	1.880996	1.878764	2.492035	2.169833	9.272710	9.679198

Source: Author's Computation, (2024).

ROA indicated a value of 0.024 in firms within the industrial goods sector, signifying an average ROA of 2.4%. A ROA of 2.4% suggests average profitability. It indicates that, on average, companies producing industrial goods can achieve a moderate return from their assets. This rate of return offers a glimpse into the sector's efficiency and profitability. It indicates a reasonable level of asset utilization efficiency, and comparing it to industry standards can provide more clarity on the sector's relative performance. For stakeholders, this ROA aids in making knowledgeable choices about investments, operational enhancements, and strategic planning.

For the explanatory parameters, bank credit exhibited an average value of 7.85, suggesting relatively good access to credit for firms. The comparatively high average suggests that manufacturing firms have considerable access to bank loans. This indicates that banks are crucial in funding operations and investments within the manufacturing industry. The slight positive skewness and low kurtosis indicate that access to bank credit is relatively evenly spread among companies, with few extreme instances. Consequently, obtaining bank credit can enhance financial performance by funding working capital, growth, and technological enhancements. Nonetheless, the degree to which this credit results in profits relies on its expense and the efficiency with which companies use the borrowed capital.

The highest loan rate of 23.57 suggests that bank funding is costly for Nigerian industrial firms. Exorbitant borrowing rates might deter businesses from taking on more debt and lower net earnings. A comparatively normal distribution of loan rates among enterprises is shown by the skewness (0.43) and kurtosis (2.17), indicating that the majority of firms experience comparable borrowing circumstances. The economic success is probably impacted by the high loan rates. Businesses have to set aside a sizable amount of their revenue to pay off debt, which lowers asset returns. Accounting departments should make sure that borrowing costs are distributed appropriately and look for ways to reduce interest expenses, such as refinancing.

Typically, companies fund 18% of their assets via debt. This suggests a moderate dependence on bank financing, which can help balance growth prospects and financial risk. The substantial skewness and kurtosis values indicate considerable variability, with certain companies being highly leveraged. This brings up worries regarding financial risks for these outliers. Although moderate leverage can improve returns by facilitating investment in productive assets, high leverage raises the risk of bankruptcy. For firms with high leverage, the substantial interest expenses related to costly bank loans (MLR) can surpass the advantages, resulting in weak financial performance.

The typical size of firms indicates that many manufacturing companies in Nigeria are medium-sized, having opportunities for expansion. Bigger companies typically enjoy improved access to loans at more advantageous rates because lenders perceive them as posing less risk. The skewness and kurtosis values suggest a fairly normal distribution,

indicating uniformity in firm size throughout the sample. Bigger companies that have more access to funding can invest in technologies that boost efficiency or increase production capacity, resulting in improved financial outcomes. Nonetheless, smaller companies might encounter increased borrowing expenses and find it difficult to produce sufficient returns.

The moderate money supply indicates an economy characterized by stable yet restricted liquidity, impacting the accessibility of bank loans. The stable distribution (Skewness 0.14 and Kurtosis 1.88) suggests reliable liquidity access among companies. A consistent money supply creates a positive atmosphere for bank lending. Nevertheless, restricted liquidity could elevate lending rates (MLR), raising financing costs and adversely affecting ROA. Companies need to align their borrowing with effective cash flow management to lessen these impacts.

Correlation Analysis

Table 2 Correlation Matrix of Variables

	BCT	DMS	MLR	FSZ	LEV	ROA
BCT	1.00000					
DMS	0.27569	1.00000				
MLR	0.13084	0.14796	1.00000			
FSZ	0.73634	0.00166	0.384818	1.00000		
LEV	0.27994	-0.41242	0.273544	0.74429	1.00000	
ROA	0.53470	0.47060	0.353686	-0.41197	0.24344	1.00000

Source: Author's Computation, 2024.

The correlation matrix table showed the correlation coefficients between the variables under study. Each cell in the table shows the relationship between two variables. This helps to see which pairs have the highest correlation.

The table.2 briefly showed the relationship of variables with each other. Return on assets is positively related to banks credit (0.535), domestic money supply (0.471), maximum lending rate (0.354) and leverage (0.243) but became negatively related with firm size (-0.412) . This meant that an increase in these independents variables except firm size resulted in the increase in performance of industrial sector in the proportion of 53.5 per cent, 47.1 per cent, 35.4 per cent, and 24.3 per cent respectively. The table therefore shows that, in general, correlations between independent variables are not high (range between 0.131 and 0.276); an indication of absence of multi-collinearity which usually associates with time series data.

Table 3 Unit Root Test Results

	Level			1st Difference		
	Intercept	Intercept and Trend	None	Intercept	Intercept and Trend	None
BCT	0.8927	0.3810	0.9791	0.0201**	0.1182	0.0249
DMS	0.9962	0.2962	1.0000	0.0092**	0.0258	0.7049
MLR	0.1612	0.1612	0.9836	0.0894	0.0135	0.0109**
FSZ	0.0006**	0.0008	1.0000	-	-	-
LEV	0.0004**	0.1290	0.0088	-	-	-
ROA	0.0000**	0.0908	0.0122	-	-	-

**5% level of significance

Source: Author's Computation, 2024.

Table 4 Summary of Unit root tests

Augmented Dickey-Fuller(ADF)				
Variables	Level	First Difference	I(d)	Remarks
BCT	-	0.0201**	I(1)	Stationary
DMS	-	0.0092**	I(1)	Stationary
MLR	-	0.0109**	I(1)	Stationary
FSZ	0.0006	-	I(0)	Stationary
LEV	0.0004	-	I(0)	Stationary
ROA	0.0000	-	I(0)	Stationary

**5% level of significance

Source: Author's Computation, 2024.

From the outcomes above, it is evident that the unit root test results of ADF revealed that only firm size, leverage, and return on assets were stationary at level, denoted as I(0), whereas bank credit, maximum lending rate, and domestic money supply were stationary at first difference, indicated as I(1). This indicates that co-integrating regression estimation is the suitable method since the series share the same order of integration. Hence, it is evident that all variables possess a unit root in their level form, but at the first difference, the variables become stationary. Consequently, the model adheres to an integration process, and in this context, the Johansen co-integration test was performed.

Co-integration Analysis

Table 5 Result of Johansen Co-integration Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.970287	72.96996	47.85613	0.0001
At most 1	0.750842	27.25992	29.79707	0.0954
At most 2	0.399604	9.194240	15.49471	0.3477
At most 3	0.178878	2.562082	3.841466	0.1095

Source: Author's Computation, 2024.

The findings disallowed the null hypothesis of no cointegration at the 0.05 level for a single co-integrating equation, while the null hypotheses of three co-integrations among the variables were not disallowed at the 0.05 critical level. Therefore, the Johansen methodology indicates that there is solely one co-integrating relationship among the variables, suggesting that no long-term equilibrium relationship exists among them.

Regression Analysis and Discussion of Results

Table 6 Results of Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BCT	2.094663	0.589168	-1.051780	0.0000
DMS	0.173207	0.060729	2.852122	0.0157
MLR	1.159479	65.15098	1.779679	0.1027
FSZ	0.001130	0.003179	0.355417	0.7297
LEV	0.040308	0.009903	4.070161	0.0022

C	-1237.021	1114.238	-1.110195	0.2906
R-squared	0.397483	Mean dependent var		0.071803
Adjusted R-squared	0.245887	S.D. dependent var		0.110926
F-statistics	82.57291	Durbin-Watson stat		0.951777
Prob(F-statistic)	0.000000			

Source: Author's Computation, 2024.

Results revealed that there a positive significant relationship exist between banks credit and return on assets of industrial goods companies in Nigeria. The result implies that access to bank credit provides these companies with the necessary funds to invest in new technologies, expand operations, and improve production processes. This, in turn, enhances operational efficiency and profitability. With additional capital, companies can scale their production, diversify product lines, and enter new markets, which can lead to increased sales and higher returns. Bank credit helps companies manage their cash flows more effectively. It ensures they have sufficient working capital to meet short-term obligations, reducing the risk of operational disruptions. By leveraging bank credit, industrial goods companies can undertake larger projects and strategic initiatives that might be unattainable with internal funds alone. This strategic use of credit can lead to higher growth rates and improved financial performance. Overall, the positive relationship between bank credit and ROA indicates that prudent borrowing and effective utilization of credit can significantly enhance the financial performance of industrial goods companies in Nigeria. This result conforms to the prior studies (Adegbaju & Olokoyo, 2018; Gideon et al., 2021)

Domestic money supply has positive significant influence on the return on assets of industrial goods companies in Nigeria. This result is in tandem with the findings of (Nnanna, 2024; Obamuyi & Olorunfemi, 2021). The implication of these findings is that a higher domestic money supply increases the overall liquidity in the economy. This makes it easier for industrial goods companies to access funds for day-to-day operations and long-term investments, thus improving their operational efficiency and profitability. An increase in the money supply generally leads to lower interest rates. Lower borrowing costs reduce the financial burden on companies, allowing them to invest more in productive assets, which can lead to higher returns on those assets. More money in circulation can boost consumer spending. This increase in demand for goods can translate into higher sales for industrial goods companies, positively affecting their revenue and return on assets. With more money in the economy, banks and financial institutions are more likely to lend, increasing the availability of credit for industrial goods companies. Access to credit can be crucial for financing expansion, innovation, and other profit-generating activities.

Maximum lending rate has positive and insignificant relationship with return on assets of industrial goods companies. This indicates that as the maximum lending rate increases, the ROA of industrial goods companies tends to increase slightly, but this increase is not substantial or reliable enough to draw firm conclusions. The maximum lending rate might not be a major determinant of profitability for industrial goods companies. Other factors, such as operational efficiency, market demand, and cost management, might play a more significant role. The industrial goods sector might have specific characteristics that make it less sensitive to changes in borrowing costs. For example, these companies might rely more on equity financing or have long-term debt agreements with fixed rates. The findings conform with (Odeniran & Udejaja, 2020; Orji, 2022)

4. CONCLUSION

From the findings drawn, while bank credits and domestic money supply play crucial roles in enhancing the financial performance of Nigeria's industrial goods companies, the maximum lending rate's impact appears limited. This highlights the need for a multifaceted approach to financial policy and sector support, considering the broader economic and operational context of these companies.

Banks and other financial institutions should increase the accessibility of credit to industrial goods companies. This can be achieved by developing tailored financial products that meet the specific needs of these companies, thereby supporting their operational and capital expenditure.

The Central Bank of Nigeria should implement policies that encourage banks to lend to the manufacturing sector at favorable terms. This can include offering incentives for banks that meet specific lending targets for industrial goods companies.

While the maximum lending rate had an insignificant impact on ROA, maintaining reasonable and predictable interest rates can help create a more stable financial environment conducive to long-term planning and investment.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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