# CREDIT MANAGEMENT AND PROFITABILITY OF LISTED MANUFACTURING FIRMS IN NIGERIA

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## ABSTRACT

This study explores the impact of credit management on the performance of listed industrial companies in Nigeria. The study follows the quantitative research approach and focuses on the period from 2011 to 2021. The dataset is sourced from secondary sources, mainly from financial statements published on the Nigerian Exchange Group website. The study utilizes the simple least square regression method and considers four explanatory variables: namely, credit debt collection, debt ratio, gearing ratio, and cashflow. The findings indicate that credit debt collection, debt ratio, and gearing all exert a highly significant positive impact on firm profitability, while the impact of cashflow on firm profitability is negative but negligible. The study concludes that credit management is an important driver of firm profitability and hence plays critical role in financial performance of a firm. The study recommends that companies should implement strong credit management procedures to improve their profitability.

*Keywords*: Credit management, performance, manufacturing companies, profit margins, liquidity

## INTRODUCTION

Regardless of the industry, credit management is a crucial business activity for organizations of all sizes. Businesses need efficient credit management policies and procedures in order to survive in a constantly changing business environment. Making sure that customers pay for the goods delivered or the services provided is a goal of credit management as an organizational process. Sollenberg (2017) defines credit management as the practices implemented by businesses to preserve and protect an ideal amount of credit and efficiently manage it. Credit management includes credit analysis, credit rating, credit classification, and credit reporting. According to Frank (2016), credit management is the method an organization uses to oversee and control its credit sales. While a company may borrow if they need money urgently and account receivables are not collected on time, the opportunity cost of this borrowing is the interest payment on the borrowed fund. Credit management, according to Myers and Brealey (2017), has a big impact on whether companies succeed or fail across all industries. Ability to manage clients and customer credit lines properly and proficiently is a key requirement for effective credit management.

Managers in organizations must ensure that they successfully control corporate credit to maintain a proper level of liquidity. Owolabi and Obida (2012) posit that a suitable credit model would provide the company with a timely collection of receivables if it were properly designed. Collection, better debt recovery at the lowest cost, and risk assessment are critical elements in the collection plan to manage credit, terms, and risk effectively.

Poor credit management can affect financial performance and lead to liquidity problems which are capable of triggering bankruptcy. Hence, there is good reason to properly examine how credit management impacts firm performance. Examining how credit management affects the financial performance of Nigerian manufacturing companies is the main goal of the study. The specific objectives are to ascertain the impact of credit debt collection on profit margin, the impact of debt ratio on profit margin, the impact of gearing ratio on profit margin, and the impact of cash flow ratio on profit margin in order to achieve the main goal. By offering analytical connections between the dependent and independent variables, the research will primarily advance our understanding of the topic.

## LITERATURE REVIEW

This section of the study reviews related literature on credit management. The section also considers the conceptual framework and the relevant theories underpinning the study. The section starts with conceptual framework, then theoretical framework and ends with the empirical framework where the research gap is being identified.

### Concept of Credit Management

The concept of credit management has continued to receive great scholarly attention, particularly in the face of the increasing turbulence in the global business environment as well as the current fluctuations and uncertainty in the global economy. In order to efficiently and effectively perform their duties and add value to shareholders, management must develop a robust schedule for managing their daily task and operations (Alhassan & Islam, 2021; Owolabi & Ibida, 2016). Iyekoroghe (2020) suggests that it is impossible to overstate the significance of credit management as it relates to financial performance in today's organization. Maintaining liquidity in day-to-day operations is essential for managing credit to guarantee that it runs smoothly and fulfills its obligations (Eljelly, 2014; Kankpang, et al., 2020). A commercial firm's efficient operation is greatly influenced by credit management. A company should avoid having excess or fall short of liquidity to meet its obligations in the immediate term. Due to its intimate connection to a company's daily activities, credit management research is crucial for both internal and external analysts (Bhunia, 2017).

The credit manager faces the trade-off between credit and profitability (Raheman & Nasr, 2017). There is no set method for establishing the ideal degree of liquidity that a firm can maintain to assure a favorable influence on its profitability; rather, a corporation's credit policy depends on the unique characteristics of the firm. Pandey (2014) claims that non-collectability of account receivables by a company will lead to losses in form of bad debts. The caliber of the accounts that the company accepts determines the magnitude of bad debt losses. Accounts receivable in a firm are claims held against other parties in the working circle, according to Donald and Penne's (2017) theory. Trade debtors and nontrade debtors are additional categories for trade borrowers. Trade debtors are those who owe money to businesses for the goods and services they have purchased, whereas non-trade debtors are those who owe money to businesses for several other reasons such as oral or written commitments to pay for items other than goods in the future.

Factors such as cash discounts, credit periods, and credit standards are typical of an organization's credit policy. Bonsall IV et al. (2017) argue that these factors can also be labelled as credit limits, credit terms, deposits, client information, and documentation. The elements of a company's credit policy cover everything from the type of client that credit may be provided to when actual collections are made, and each one is utilized as a tool for managing account receivables, which are the result of credit sales (Ojeka, 2015). No two organizations have the same credit policy. Regardless of the credit policy a firm chooses, it must make sure that it can draw in and keep loyal clients without negatively impacting its cash flow (Kalunda et al., 2014).

## THEORETICAL FRAMEWORK

### Transactions costs theory

Schwartz (1974) was the first to develop this theory. According to Alhassan and Islam (2021), the transactional theory presupposes that suppliers may have an edge over traditional lenders in determining the actual financial state or credit worthiness of their consumers. Additionally, suppliers are better able to monitor and enforce the credit repayment process. Petersen and Rajan (2017) categorize information gathering, managing the buyer, and retaining value in existing assets as the three sources of cost advantage. The first source of cost advantage can be explained by the fact that sellers can access information about purchasers more quickly and inexpensively because it is acquired during regular business operations. This implies that sellers are prone to visiting their clients more often than financial institutions, which gives them more insights into the clients' conditions. Furthermore, rejection of a discount for prompt payments can also serve as a red flag to the supplier about the creditworthiness of the client.

### Aggressive theory

When a company intends to accept a high level of risk and when short-term funds are heavily utilized to finance current and fixed assets, this principle is put into practice (Sohail, et al., 2016). Low interest rates are a characteristic of this strategy. It is crucial to remember that short-term debt has a bigger risk than long-term debt, although this mainly applies to businesses or corporations that operate in a stable economy and have predictable cash flows. A business with a strict working capital policy will have little goods on hand, short credit terms available to consumers, and little cash on hand. Due to the possibility that a business may not have the resources to cover short-term obligations, this policy raises the default risk.

## EMPIRICAL FRAMEWORK

Nyawera (2013) investigates the impact of credit policy on the profitability of Kenya's microfinance institutions. The study reveals that although there is a relationship between credit policy variables and profitability, the effect was quite small. The study results also show a negative relationship between credit management measures and profitability.

Gakure et al. (2014) sample 15 firms quoted on the Nairobi stock exchange for the period 2006 to 2010 to examine the performances of manufacturing companies. They consider the correlation between working capital management and performance. Using a regression model, the study finds a strong inverse association between liquidity and performance. Besides, while the overall model is significant, average payment period is found to be the only independent variable whose effect is not statistically significant.

Achou and Tenguh (2016) examine credit management in Thai businesses and how it affects their financial performance. They found that firm performance is enhanced by better credit management practices. Therefore, it is vital that firms protect their investors' interests by implementing a robust credit management system. Similarly, focusing on Malaysian manufacturing firms, Soke Fun Ho and Yusoff (2017) find evidence that majority of manufacturing companies experience outright default owing to their clients' inability to fulfill their obligations regarding lending, settlement, and related transactions.

Nagarajan (2018) investigates credit management practices amongst Mozambican businesses. The study discovered that credit management is a dynamic process that should be built during periods of stability and put to the test during periods of turbulence.  All relevant stakeholders must guarantee complete commitment to the process. It is gratifying to learn that reductions in risk-related losses can occur when there is careful portfolio and cash flow management, strong institutional infrastructure with qualified human resources, client discipline instillation, and efficient stakeholder coordination.  In a study on the viability and profitability of manufacturing businesses, Matu (2018) finds that in Kenya, efficiency and effectiveness are the top service delivery concern.

The review of extant literature shows that credit management is a key driver of a firm's profitability, liquidity, and operational efficiency. However, extant literature has mainly analyzed credit management from the perspective of efficiency and liquidity and how this affect profitability. In this study, we include additional perspective to credit management which is financial stability and solvency as measured by debt ratio. This study therefore links credit management to the four central areas of firm performance such as profitability, liquidity, efficiency, and solvency.

## METHODOLOGY

This section captures the principles that underpin the execution of the study. This includes the various techniques, strategies and methods employed in collecting and analyzing data used for the research, with the view of proffering solutions to identified problems. The quantitative research design is employed. This design allows the use of quantitative data and methods to investigate the relationship between the variables of interest. Profitability as measured by profit margin using Return on Asset (ROA) is the dependent variable of the study. The study used four independent variables to measure the impact of credit management on firm performance. The four variables include credit debt collection, debt ratio, gearing ratio and cash flow ratio.  The study uses secondary data. The secondary used for the study was extracted from the annual financials and accounts of quoted manufacturing companies in Nigeria. The annual reports were assessed through the websites of the individual companies as well as the Nigerian exchange group fact book. The study focuses on the period from 2011 to 2021.

### Method of Data Analysis
This study employs the simple regression method to analyze the relationship between credit management and firm profitability.

### Model Specification
**For hypothesis, the following simple regression model is specified.**

PM = F (CDC)…………………………………………………… (3.1)

PM = $b_0$ + $b_1$CDC + $e_t$…………………………..…………...... (3.2)

Where: ROA= return on assets; CDC = credit debt collection; $b_0$ = regression constant, $b_1$= coefficient capturing the effect of credit debt collection on profit margin, and $E_t$= error term

**For hypothesis two the following simple regression was specified**

ROA = F (DR)……….………………………………………… (3.3)

ROA = $b_0 + b_1$DR + $e_t$…………………………..…………... (3.4)

Where: ROA = return on assets; DR = debt ratio; $b_0$ = regression constant, $b_1$= coefficient capturing the effect of debt ratio on profit margin, and $E_t$= error term

**For hypothesis three the following simple regression was specified**

ROA = F (GR)……….………………………………………… (3.5)

ROA = $b_0 + b_2$GR+ $e_t$…………………………..…………..... (3.6)

Where: ROA= return on assets; GR= gearing ratio; $b_0$ = regression constant, $b_1$= coefficient capturing the effect of gearing ratio on profit margin, and $E_t$= error term

**For hypothesis four the following simple regression was specified**

ROA= F (CFR)……….………………………………………… (3.7)

ROA = $b_0 + b_1$CFR+ $e_t$…………………………..…………..... (3.8)

Where: ROA= return on assets; CFR = cash flow ratio; $b_0$ = regression constant, $b_1$= coefficient capturing the effect of cash flow ratio on profit margin, and $E_t$= error term

## RESULTS

**Estimation of Regression Models**

Table 1 shows the empirical results for the effect of credit debt collection on return on asset based on the least squares method. The calculated regression parameter's coefficient has a positive sign and so agrees with our apriori expectation. This signal implies that credit debt collection has a favorable impact on ROA. The R-square of 0.765 shows that the explanatory variable accounts for or explains 76% of the sample variation in ROA, while the remaining 24% is unaccounted for. The remaining 24% can result from other factors that are not included in the model. The high value of R-square underscores the strong association between credit debt collection and ROA. Additionally, the overall significance of the model is examined using the F-statistic. According to the F-value of 13.483 and its p-value of 0.0022, the model is statistically significant at the 1% level of significance. Finally, the D.W value of 1.855, which is very close to 2, shows that autocorrelation is less likely to be present in the model.

**Table 1: Credit Debt Collection and Profit Margin (ROA)**

Dependent Variable: ROA

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| CDC | 9.330007 | 4.000007 | 2.332497 | 0.0332 |
| C | 21.16772 | 3.565474 | 5.936860 | 0.0040 |

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

| | | | | |
|---|---|---|---|---|
| R-squared | 0.765514 | | | |
| Adjusted R-squared | 0.731893 | | | |
| F-statistic | 13.483829 | Durbin-Watson stat | | 1.855709 |
| Prob(F-statistic) | 0.002218 | | | |

**Source: E-views 9 Computation, 2022**

Using the ordinary least squares method, Table 1 illustrates the estimated relationship between debt ratio (DR) and return on asset (ROA). The estimated coefficient of the regression parameter likewise is associated with a positive sign, which is consistent with our apriori expectation. The consequence of this sign is that the debt ratio has a favorable impact on the on ROA. The R-square coefficient of determination shows that approximately 54% of the sample variation in ROA is explained by debt ratio, while 46% is unaccounted for. The high value of R-square underscores the strong association between debt ratio and ROA. Additionally, the overall significance of the model is examined using the F-statistic. According to the F-value of 13.158, and its p-value of 0.0011, the model is statistically significant at the 1% level. Finally, the D.W value of 1.698 shows that autocorrelation is less likely to be present in the estimated model.

**Table 2: Debt Ratio and Profit Margin (ROA)**

Dependent Variable: ROA

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| DR | 4.286705 | 1.621883 | 2.643042 | 0.0211 |
| C | 17.18768 | 1.764113 | 9.742959 | 0.0006 |

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

| | | | | |
|---|---|---|---|---|
| R-squared | 0.541254 | | | |
| Adjusted R-squared | 0.511568 | | | |
| F-statistic | 13.158893 | Durbin-Watson stat | | 1.698401 |
| Prob(F-statistic) | 0.001151 | | | |

**Source: E-views 9 Computation, 2022**

Table 2 displays the results of the estimated relationship between gearing ratio (DR) and return on asset (ROA). The estimated coefficient of the regression parameter likewise has a positive sign, which is consistent with our apriori expectation. This sign implies that gearing ratio has a positive impact on ROA. With an R-square of 0.877, the explanatory variable can be said to be responsible for or explain 87% of the sample variation in ROA, leaving 23% unaccounted for. The remaining 23% can result from other variables or aspects that are not included in the model. The high value of R-square indicates that gearing ratio and ROA are strongly related. Additionally, the overall significance of the model is examined using the F-statistic. According to the F-value of 28.595 and its p-value of 0.0058, the model is statistically significant at the 1% level. Finally, the D.W value of 1.772 shows that there is little or no autocorrelation in the fitted model.

**Table 3: Gearing Ratio and Profit Margin (ROA)**

Dependent Variable: ROA

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| GR | 16.78626 | 3.139124 | 5.347436 | 0.0059 |
| C | 21.87428 | 1.422685 | 15.37535 | 0.0001 |

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

| | | | |
|---|---|---|---|
| R-squared | 0.877282 | | |
| Adjusted R-squared | 0.846603 | | |
| F-statistic | 28.59507 | Durbin-Watson stat | 1.772844 |
| Prob(F-statistic) | 0.005896 | | |

**Source: E-views 9 Computation, 2012**

Using the ordinary least squares method, Table 3 displays the results for cash flow (CF) and return on asset (ROA). The estimated coefficient of the regression parameter has a negative sign, which ss consistent with our aprior expectation. The consequence of this sign is that cash flow has a detrimental impact on ROA. The R-square of 0.507 reveals that approximately 50% of the sample variation in ROA is caused by or explained by the explanatory variable, while the remaining 50% is unaccounted for. Other variables or circumstances that are considered in the model account for the other 50%. The high value of R-square indicates that cash flow and return on asset share strong relationship. Additionally, the overall significance of the model is examined using the F-statistic. According to the F-value of 15.048, and its p-value of 0.0037, the model is statistically significant at the 1% level. Finally, the D.W value of 1.693 shows that the fitted model is less likely not influenced by autocorrelation.

**Table 4: Cash flow and Profit Margin (ROA)**

Dependent Variable: ROA

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| CF | -52.12100 | 50.90281 | -1.023932 | 0.3637 |
| C | 45.54452 | 10.98157 | 4.147359 | 0.0004 |

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

| | | | |
|----------|-------------|------------|-------------|
| R-squared | 0.507675 | | |
| Adjusted R-squared | 0.479594 | | |
| F-statistic | 15.048436 | Durbin-Watson stat | 1.693845 |
| Prob(F-statistic) | 0.003749 | | |

Source: E-views 9 Computation, 2022

**Test of hypotheses**

Based on the outcome displayed in Table 1, the projected t-value for CDC is 2.332. It can be verified that this is higher than the threshold of 1.96. Also, the F-ratio is high at 13.483 with a p-value of 0.0022, hence, it is highly statistically significant. The null hypothesis is therefore rejected, and the alternative is accepted, showing that credit debt collection has a strong and highly significant positive effect on firm profitability.

According to results presented in Table 2, the estimated t-value for DR is 2.643. It can be verified that this is higher than the threshold of 1.96. Also, the F-ratio is high at 13.158 with a p-value of 0.0011, hence, it is highly statistically significant. The null hypothesis is therefore rejected, and the alternative is accepted, showing that debt ratio has a strong and highly significant positive effect on firm profitability.

According to results shown in Table 3, the estimated t-value for GR is 5.347. It can be verified that this is higher than the threshold of 1.96. Also, the F-ratio is high at 28.595 with a p-value of 0.0058, hence, it is highly statistically significant. The null hypothesis is therefore rejected, and the alternative is accepted, showing that gearing ratio has a strong and highly significant positive effect on firm profitability.

According to results shown in Table 4, the estimated t-value for CF is 1.023. It can be verified that this is less than the threshold of 1.96. The estimated p-value is 0.3637, which is higher than all conventional significance levels. The null hypothesis is therefore retained, and the alternative is not accepted, showing that cashflow has no significant effect on firm profitability.

## CONCLUSION

It is discovered that credit debt collection has a favorable and considerable impact on businesses' return on assets. Both debt ratio and gearing ratio have a positive and significant impact on return on assets, which implies that high ratios are associated with high profitability, and vice versa. By contrast, cash flow has a negative but insignificant impact on return on assets. These findings generally suggest that credit management plays a crucial role in decisions about a firm's financial management. Businesses that manage the trade-off between profitability and liquidity may be able to handle credit more effectively. However,

the study aims to experimentally assess the efficiency of debt collection, debt ratio, and gearing ratio as they are used to recover bad debt and invariably raise an organization's profitability.

## RECOMMENDATIONS

As a result of the study's empirical findings, the following suggestions are hereby made:

1. Manufacturing companies should formulate and implement sound credit management policies to improve their profitability and guarantee sufficient liquidity.
2. Manufacturing companies should engage the services of debt factoring agents to facilitate prompt collection of debts, reduce bad debts to the nearest minimum, and improve profitability.
3. Manufacturing companies should make proper use of debts/gearing as it has positive impact on profitability.
4. Manufacturing companies may improve their profitability by ensuring that cash outflows are not excessive or outside the control of the company.

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