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Effect of Credit Management on Liquidity Position of Selected Manufacturing Firms in Nigeria

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Abstract

Credit serves as the life blood of modern commerce, as its efficient management is crucial for business survival. Overtime the issues of credit risk has continued to pose significant challenge to businesses, necessitating an innovative research and possible solutions. This study examined effect of credit management on liquidity position of manufacturing firms in Nigeria. The specific objectives of this study are to: determine the effect of account receivable period, account payable period, and cash conversion cycle on current ratio of listed manufacturing firms in Nigeria, using a panel regression model to ascertain the impacts at a 5% level of significance. Ex post facto research design was adopted, and data were sourced from the annual reports of twelve (12) manufacturing firms in the consumer and industrial goods sector listed in the Nigerian exchange group (NGX) for a period of ten years (2014-2023). Data were analyzed using the fixed effect panel regression model. Research findings shows that account receivable period and account payable period have a negative effect on current ratio, while cash conversion cycle was seen to have a positive effect on current ratio. This study recommends that manufacturing firms should strike a balance between maintaining effective credit management practices, effective internal control mechanisms and good customer relations. It is advisable that firms should negotiate favorable terms that allow for flexibility without straining cash reserves, thus safeguarding liquidity, however, firms should ensuring that resources are not unnecessarily tied up in working capital to avoid risk of high leverage.

Keywords: Account Receivable Period; Account Payable Period; Cash Conversion Cycle; Current Ratio

Introduction

The manufacturing sector is a significant contributor to the global economy. It serves as a catalyst for employment generation, production of goods and services in the economic system. In Nigerian economy the manufacturing sector plays a crucial role, accounting for almost 12.4% of the country's annual gross domestic product (National Bureau of Statistics, 2023). Amidst these importance, for manufacturing firms to operate smoothly, effectively and remain liquid in the dynamic global market, there is need to maintain an increased sales at all time. Based on this, professionals have recognized that giving credit is one of the strategies used by businesses to increase sales volume. Credit serves as a critical marketing link for the transportation of goods from manufacturing, distribution and to a large number of customers who cannot pay right away. Credit extension is vital and inevitable in any business operation, though it can still pose a threat to any company's performance if not properly managed. Therefore, When determining a credit period, a corporation must assess the likelihood that the client would not pay on the due date, the size of the account to allow for a shorter credit period for smaller accounts and vice versa (Akinleye, & Olarewaju 2019).

In a credit transaction the firm issues a certain quantity of item to the buyer during a period of purchase, with anticipation that payment will be made at an agreed time. Considering the volatility and unpredictable nature of business environment, the buyer may not keep up to the payment expectations. This has been one of the major business issues globally, especially in developing countries like Nigeria. As Inefficient credit control jeopardizes all efforts to achieve a sustainable return on invested funds. The ability to mitigate credit risks has been a contemporary and controversial debate in literature (Adegbie & Otitolaiye, 2020). This situation poses a receivable risk that must be carefully assessed and handled, and one of the most effective ways firms can handle this receivable and payment risk in their operation is by the adoption of an effective credit management system. Credit management is a part of financial management that includes credit analysis, credit assessment, credit rating and credit reporting (Bala, Auwal and Salisu,

2022). Considering the present economic uncertainties affecting the business environment credit management remains a significant challenge for firms to thrive. One of the major obstacles firms face is limited access to credit facilities faced by manufacturing firms. Less than 5% of micro small and medium enterprises have been able to access adequate finance for working capital and for funding business growth (PwC, 2020). Also, issue of high interest rate has been a major challenge. According to (CBN, 2023), interest rate has witnessed an increase of 16.5% to 18.75% from 2022 to 2023 respectively, as a result borrowing becomes costly making firms unable to invest and operate expansively, and this can have a negative influence on economic growth. Furthermore, issue of non or delayed payment from customers have been a challenging situation on credit control, with average days sales outstanding reaching up to 90 days or more as against maximum of 60days (PwC, 2020). These challenges have led to failure of various Nigerian businesses in the past, this can be evidenced in the case of Bank PHB in 2011, Etisalat Nigeria in 2017. Therefore, there is need for effective credit management procedure to enables firms optimize their working capital, reduce financial risks, and improve sales and overall financial performance (Wagner, 2019).

However, overtime effective credit management practices has been a major challenge faced by many industrial business especially in developing countries like Nigeria. Inability to recover bad debts from consumers who were unable to pay for products or services offered to them on credit when they were due, accounted for a large portion of the liquidity problem. This pending challenge between effective credit management practices and firms liquidity necessitated this study. Though previous studies have investigated the impact of credit management on firm performance, there was evidence of mixed results. Some studies have found a positive relationship between effective credit management and firm liquidity, while others have reported no significant relationship. Smith and Roberts (2019) found a positive relationship between stringent credit management practices, such as thorough credit assessments and regular monitoring of receivables, and financial performance of small and medium enterprises in South Africa. On the other hand, Adeyemi and Adebiyi (2020) found no significant

relationship between credit management and firm performance. Despite these studies, there remains a significant gap in the literature regarding the specific challenges faced by manufacturing firms in Nigeria regarding credit management and their impact on firm liquidity. The existing studies fail to provide a comprehensive understanding of the credit management practices employed by manufacturing firms in Nigeria and their effect on liquidity. This study aims to fill this gap by investigating the nexus between credit management and liquidity of manufacturing firms in Nigeria, with a focus on the unique challenges faced by these firms in the country's underdeveloped credit market.

Literature Review

Conceptual Review: Credit management involves the processes and strategies employed by firms to manage their credit sales, collections, and payments (Lambert & Lambert, 2019). The dynamic business environment, with lots of competitors, has raised the need for firms to retain higher market share values through increased daily sales. Therefore to achieve these firms resort to giving credits to customers giving them the opportunity to make purchases and pay at a later date. Therefore, Trade credit plays a crucial role for firms as it serves to safeguard their sales against erosion by rival companies, while concurrently enticing prospective clients to make purchases under advantageous conditions. In industries characterized by competitive dynamics, the practice of offering goods on credit becomes a requisite strategy. According to Adeoye and Elegbede (2021), firms that efficiently manage their credit policies and collections processes experience shorter cash conversion cycles, which enhances liquidity by accelerating cash inflows from sales.

Theoretical Framework: Various theories have been propounded to anchor the subject matter. Which are the Financial Distress theory and Trade-off Theory

Financial Distress Theory

The financial distress theory was propounded by Baldwin and Scott in 1983, this theory postulated that firms enter into states of

financial distress when they fail to honor their debt commitments as and when required. The theory posits that financial distress arises when a firm struggles to meet its financial obligations due to inadequate cash flow or excessive debt burdens. This condition can result from various factors, including poor credit management, ineffective liquidity management, operational inefficiencies, or external economic shocks.

Trade-Off Theory

The trade-off theory was propounded by Kraus and Litzenberger in 1973. Trade-off theory posits that firms balance the benefits of debt, such as tax shields, against the costs of potential financial distress. In credit management, firms must weigh the advantages of extending credit to increase sales against the risks of bad debts and liquidity issues. This theory helps firms determine the optimal level of credit to offer customers. The trade-off theory posits that firms aim to achieve an optimal capital structure by balancing the tax advantages of debt against the costs of potential financial distress.

Empirical Review: Ncube and Dlamini (2021) delved into the influence of accounts receivable collection practices on the liquidity of retail businesses in South Africa. A longitudinal research design was embraced, with data gathered from the financial statements of 50 retail companies over a span of six years (2015-2020), and the information was examined using correlation analysis. The discoveries revealed that a higher receivables turnover was linked to improved current and cash ratios, implying that effective collection of receivables boosts a company's capacity to fulfill its short-term commitments and sustain cash flow. Chukwu and Onuoha (2019) explored the influence of accounts receivable collection on the liquidity management of manufacturing companies in Nigeria. A quantitative research method was employed, with information gathered from financial statements of 30 manufacturing companies listed on the Nigerian Exchange Group over a span of five years (2014-2018). The study found that a shorter average collection period positively impacts the liquidity of manufacturing firms. Poyraz (2019) investigated the relationship between credit risk and the performance of deposit banks in Turkey. *Ex-post facto* research design

was adopted as the study used nonperforming loans (NPLs) as a proxy for credit risk, while Return on Equity (ROE) and Return on Assets (ROA) were used as indicators of bank performance. The research utilized panel regression analysis on data spanning 13 years to examine the relationship between credit risk and bank performance. The study revealed a negative link between credit risk and all performance variables. Specifically, higher levels of NPLs were associated with lower ROE and ROA, indicating that credit risk adversely affects the financial performance of deposit banks. The study maintains Companies that successfully collected receivables more swiftly enjoyed higher current and quick ratios, showcasing improved cash flow positions. Mensah and Asante (2020) investigated the influence of accounts receivable management on the liquidity of SMEs in Ghana. The researchers adopted a mixed-methods approach, combining quantitative data from the financial statements of 100 SMEs with qualitative insights from interviews with SME owners and managers. Quantitative data were analyzed using correlation and regression analysis, while qualitative data from interviews were analyzed using thematic analysis. The study found a positive relationship between receivable collection and liquidity. By implication SMEs with effective accounts receivable management practices, such as regular monitoring of receivables and timely follow-up on overdue accounts, reported better liquidity, as indicated by higher current ratios. The qualitative data highlighted the challenges SMEs face in maintaining liquidity while offering credit to customers. The research emphasized the importance of balancing credit extension with efficient collection practices to sustain liquidity and business operations. Sharma and Kaur (2021) investigated the relationship between credit risk management and the profitability of Indian public sector banks from 2009 to 2019. Several methods, including survey design, analysis of variance, correlation analysis, and multiple regressions, were employed in the study's methodology. According to the findings, the profitability performance of banks was adversely affected by non-performing loans, which could expose them to significant volatility and the global financial crisis. Nwokoye (2022) explored the Cash Conversion Cycle and Company Performance in Nigeria: A Sectorial Examination. Utilizing pooled OLS and multivariate panel regression methods and with data

that spanned the 2010 to 2020 reference timeframe. Results reveal that the days payable outstanding (DPO) has a positive yet non-significant effect on performance. Meanwhile, day's sales outstanding (DSO) factors have a negative and significant influence on performance. Adekunle and Ojo (2020) examined the effect of credit management on the financial performance of commercial banks in Nigeria. Applying a quantitative research design, gathering secondary data from the yearly reports of ten year commercial banks (2008-2018). The data were assessed using multiple regression analysis to identify the connection between credit management factors and financial performance indicators. The study discovered a significant negative correlation between the non-performing loans (NPL) ratio and the return on assets (ROA), indicating that higher levels of NPLs negatively impact bank performance. On the other hand, the loan-to-deposit ratio (LDR) showed a positive effect on ROA, suggesting that banks with a greater ratio of loans to deposits typically perform better financially. The findings emphasize the significance of effective credit risk management in boosting bank profitability.

Gap in Literature

Based on the reviewed empirical study, it was discovered that relatively few works have done on the subject matter in Nigeria, in relation to the consumer goods and industrial goods sector of manufacturing firms concurrently. Most previous studies on the topic has been focused majorly on the Financial service sectors as the study of Sharma and Kaur (2021) studied the Relationship between credit risk management and the profitability of Indian public sector banks from 2009 to 2019, Adekunle and Ojo (2020), Studied the effect of credit management on performance of deposit money banks in Nigeria, though Chukwu and Onuoha (2019) studied Effect of Account receivable period on liquidity management of Manufacturing Companies in Nigeria., but their study was confined mainly to the account receivable period as a credit management strategy, neglecting various indices like Account payable period and level of cash conversion. This area of neglect has created a gap which this study seeks to fill. Previous studies on the subject matter also neglected various firms in the industrial goods sector

and consumer goods sector of the manufacturing companies especially in Nigeria, therefore to fill this existing gap and also to widen the horizon of research findings on the subject matter, this study aims to ascertain the effect of credit management on liquidity position of manufacturing firms in Nigeria, with keen focus on various credit management determinant like account receivable and payable period and cash conversion period of industrial and consumer goods sector of manufacturing firms in Nigeria.

Methodology

Ex-post facto research design was adopted for this study. *Ex-post facto* design is the type of research design which involves events that have happened or documented, this design eliminates data manipulation tendency and attempts to control variables under study. However the population of this study consists of all the thirty four (34) manufacturing firms operating within the industrial goods and consumer goods sector, listed in Nigerian Exchange Group (NXG) as at 31st December 2023. To determine the sample size, purposive sampling method was used. Purposive sampling is a non-probability sampling technique, where the researcher chose sample based on certain criteria that will help the study to meet its desired objectives. Criteria like data availability and as well firms that had problem with Nigerian Exchange Group (NGX) within the period covered in the study were excluded. It is in the light of the above criteria and procedure twelve (12) industrial and consumer goods manufacturing firms in the Nigeria Exchange Group (NXG) were selected as sample for this study.

Table 1. Variables Descriptions

S/N	Variables	Model	Measurement
	Independent Variables		
1	Account receivable period	ARP	Average account receivables/Net credit sales X 365
2	Account payable Period	APP	Average account payables/Cost of goods sold X 365
3	Cash conversion cycle	CCC	Days inventory outstanding + Days sale outstanding – Days

			payable outstanding
	Dependent Variables		
5	Current ratio	CR	Current Assets / Current liabilities
	Control Variables		
7	Firm size	FMZ	Natural log of Total Asset
	Firm Age	FMG	Number of Years the firm has existed

Source: Author's Computation, (2024)

Model Specification

This study adopts a panel regression model on a cross-sectional study of 12 firms along with previous theoretical and empirical specifications to examine data spanning the period 2014-2023. Panel regression analysis is a regression that involves the combination of time series and cross-sectional data. Panel data is an important method of longitudinal data analysis because it allows for several regression analyses in both spatial (units) and temporal (time) dimensions, which makes it suitable for this study. Following the hypotheses earlier formulated, a panel regression model is formulated to capture the Pooled, Fixed, and Random effect of pricing policy on performance. This model will help to achieve the objectives earlier stated expressly as.

$Yit = \beta 0 + \beta_1 X_{it} + \beta_2 Z_{it} + \mu_{it}$... (1)

$LogCR_{it} = \beta_o + \beta_I (LogARP_{it}) + \beta_2(LogFMZ_{it}) + \beta_3(LogFMG_{it}) + \mu_{it}$ .... (2)

$LogCR_{it} = \beta_o + \beta_I (LogAPP_{it}) + \beta_2(LogFMZ_{it}) + \beta_3(LogFMG_{it}) + \mu_{it}$ .... (4)

$LogCR_{it} = \beta_o + \beta_I (LogCCC_{it}) + \beta_2(LogFMZ_{it}) + \beta_3(LogFMG_{it}) + \mu_{it}$ ..... (5)

Where: Y_{it} = Dependent Variables.

β_0 = Intercept of the Equation.

β_1 = Coefficient of X_{it} Variable.

X_{it} = Independent Variable.

i = (Cross-Sectional Variables) Number of Firms

t = Period

μ = Error terms

CR = Current Ratio (dependent variable)

QR = Quick Ratio (dependent variable)
ARP = Account receivable period (Independent variable)
CMBP = Account payable period (Independent variable)
CCC = Cash conversion cycle (Independent variable)
FMZ = Firm size (Control variable)
FMG = Firm age (Control variable)

Estimation Procedures

Pre-test

The estimation processes will follow an array of pre-estimation tests, ranging from, Descriptive statistics, to ascertain the individual characteristics and normality of the variables. Augmented Dickey- Fuller (ADF) Unit root test, the ascertain stationarity properties of the data for a robust analyses.

Method of Data Analysis

The panel regression model took the form of the Fixed Effects Model, Random Effects Model, and Pooled Ordinary Least Square (OLS) model to establish the most appropriate regression with the highest explanatory power that is better suited to the data set employed in the study. The Pooled Ordinary Least Square (POLS) will be used in the first instance. However, because of the weaknesses associated with it, The Fixed Effects Model (FEM) and Random Effect Model (REM) will be adopted to capture the performance of the firms considered in the study. The usual identification tests the Housman's Chi-square statistics for testing whether the Fixed Effects model estimator is an appropriate alternative to the Random Effects model will be also computed for each model.

Decision: If the probability value of the Hausman test is significant (< 0.05) then the Random Effects Model (REM) is more appropriate. If the probability value of the Hausman test is non-significant (> 0.05), the Fixed Effects Model (FEM) would be more suitable.

Table 2*:* A prior Expectations

Independent variables	Dependent variables	Inference
Account receivable period	Current ratio	- Sig.

Account payable period	Current ratio	+	Sig.
Cash conversion cycle	Current ratio	-	Sig.

Source: Author's, (2024)

Data Presentation, Analysis and Discussion

Table 3: Descriptive Statistics

	ARP	APP	CCC	DR	CR	QR	FMZ	FMG
Mean	40.48719	245.7318	-94.30735	0.706614	1.165241	2.970008	8.400008	59.47458
Median	35.77624	201.0075	-64.71819	0.513274	1.086237	40568871	72765460	56.00000
Std. Dev.	27.33305	268.4558	219.1573	1.733953	0.701851	1.460009	3.560009	26.02225
Skewness	0.842161	5.407104	-4.556212	10.19153	1.690226	7.039468	5.381994	0.559493
Kurtosis	3.820011	34.98411	26.74994	107.9795	8.254246	53.54454	31.13695	3.802231
Jarque-Bera	17.25434	5604.659	3181.554	56227.78	191.9199	13535.42	4462.127	9.320547
Probability	0.000179	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.009464

Source: Authors Computation using E-views

Information on table above, shows that Account receivable period (ARP) 0.842161, Account payable period (APP) 5.407104, Debt ratio (DR) 10.19153, Current ratio (CR) 1.690226, Quick ratio (QR) 7.039468, Firm size (FMZ) 5.381994 and Firm age (FMG) 0.559494, has a positive skewness (a long tail) showing a positive departure from the mean (to the right), while Cash conversion cycle (CCC) -4.558212 has a negative skewness which indicates a negative departure from the mean (to the left).

On the kurtosis of the data, information shows that Account payable period (APP) 34.98411, Cash conversion cycle (CCC) 26.74994, Debt ratio (DR) 107.9795, Current ratio (CR) 8.254246, Quick ratio (QR) 53.54454, and Firm size (FMZ) 31.13695 has a kurtosis greater than 3 (>3) which implies that the dataset produces more outliers than the normal distribution and by implication, the datasets are said to be leptokurtic in Nature.

In other hand, Account receivable period (ARP) 3.820011, and Firm age (FMG) 3.802231has a kurtosis equals 3 (=3) this shows that the distribution of the dataset is neither too peaked nor too flat meaning that the data are normally distributed. By implication, the datasets are said to be Mesokurtic in Nature.

The p-value of the jaque-bera statistics Account receivable period (ARP) 0.000179, Account payable period (APP) 0.000000, Cash conversion cycle (CCC) 0.000000, Debt ratio (DR) 0.000000, Current ratio (CR) 0.000000, Quick ratio (QR) 0.000000, Firm size (FMZ) 0.000000 and Firm age (FMG) 0.009464 which is less (< 0.05) shows that the data set are not normally distributed.

Cross-Sectional Dependence Test

To ascertain whether the residuals of the regression are correlated across different groups or units, to avoid bias and inconsistency in the model, it is very important to conduct a cross-sectional dependence test to ensure incorrect inference and also to ascertain the methods to be utilized to perform the unit root and co-integration tests. Therefore, before the model estimation, the test for the existence or absence of cross-sectional reliance in the study's model was carried out.

Table 4: Cross-Sectional Dependence Test Results

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	79.23950	66	0.1271
Pesaran scaled LM	1.152351		0.2492
Pesaran CD	1.115202		0.2648

Sources: Authors Computation using E-view

Pesaran's test was employed to test for cross-sectional reliance in the series. The null hypothesis of no cross-sectional dependence is accepted at a conventional significance level of 5%. This can further be substantiated by the Breusch-Pagan LM test statistics value of 79.23950, Pesaran scaled LM statistics value of 1.152351, and the Pesaran CD test statistics value of 1.115202 with corresponding probability value of (prob.) 0.1271, 0.2492 and 0.2648 respectively which are above 5% conventional level of significance further confirms the acceptance of the null hypothesis of no cross-sectional dependence of the residuals in the data.

Panel Unit Root Test

Most cross-sectional and time-series data in the econometric analysis are mostly non-stationary (Engle and Granger, 1987). Since

there is no presence of cross-sectional dependence on the data and as well to ensure the reliability of our analysis the summarized unit root test model of Augmented Dickey-Fuller and Phillips-Perron was adopted to test the stability properties of the variables.

Table 5: Augmented Dickey-Fuller and Phillips-Perron Unit Root Test

Variables	ADF Fisher Chi-Square Statistic (Prob)	P - Fisher Chi-Square Statistic (Prob)	Inference
LogCR	45.5203** (0.0051)	54.5807** (0.0004)	1(1)
LogQR	45.9433** (0.0045)	56.1516** (0.0002)	1(1)
LogARP	71.6946** (0.0000)	70.7075** (0.0000)	1(1)
LogAPP	48.7343** (0.0020)	54.9355** (0.0003)	1(1)
LogCCC	61.3138** (0.0000)	58.8522** (0.0001)	1(1)
LogDR	58.6829** (0.0001)	59.2595** (0.0001)	1(1)
LogFMZ	39.4336** (0.0246)	67.2207** (0.0000)	1(1)
LogFMG	221.649** (0.0000)	221.048** (0.0000)	1(1)

Source: Researcher's Computation using E-view

The p-values are smaller than 1%, the null hypothesis is rejected, and we conclude that the variables series are stationary.

****, **, * mean significant at 1%, 5% and 10% respectively. P-Values are in parenthesis.*

The panel unit root results displayed in Table above shows that the studied variables attained stability at the first level (1) order of integration. This indicates that the data was fit for a meaningful analysis with a lower possibility of producing a spurious result after first differencing.

Table 6: Hausman Test for Hypothesis One

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.454644	3	0.0375

Source: Researcher's Computation using E-view

Table 7: Hausman Test for Hypothesis Two

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	19.588268	3	0.0002

Source: Researcher's Computation using E-view

Table 8: Hausman Test for Hypothesis Three

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.943710	3	0.0007

Source: Researcher's Computation using E-view

The Hausman chi-square test above shows that p-value of 0.037), 0.0002 and 0.0007 which is significant at 5% conventional level of significance. Therefore the fixed effect estimate is accepted as against the random effect estimate.

Panel Regression Result for Hypothesis One

H_0: Account receivable period have no significant effect on current ratio of listed manufacturing firms in Nigeria

$$LogCR_{it} = \beta_o + \beta_I (LogARP_{it}) + \beta_2(LogFMZ_{it}) + \beta_3(LogFMG_{it}) + \mu_{it} \ldots\ldots\ldots (1)$$

Table 9: Dependent Variable: LogCR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.350420	1.308174	-1.796718	0.0753
LogARP	-0.015164	0.026964	0.562386	0.5751
LogFMZ	0.090274	0.031529	2.863158	0.0051
LogFMG	0.359018	0.261212	1.374434	0.1722
Effects Specification				
R-Squared	0.428978	Durbin-Watson stat		1.239185
F-Statistics	5.634334	Prob(F-statistic)		0.000000

Source: Author's Computation using E-view

The result in Table above showed the estimation result of the effect of account receivable period on credit ratio of listed manufacturing firms in Nigeria. Result shows that account receivable period (ARP) have a negative and non-significant effect on credit ratio (CR) with a co-efficient value of -0.015164 and corresponding probability (Prob) value of 0.5751. Firm size (FMZ) has a positive and significant effect on credit

ratio with a co-efficient value of 0.090274 and probability (Prob) value of 0.0051. While, Firm age (FMG) have a positive and non-significant effect on credit ratio with a co-efficient value of 0.359018 and probability (Prob) value of 0.1722. The R^2 of approximately 43% measures the goodness of fit of the panel regression model also showing the model reliability and the variation in the dependent variable accounted for by the independent variable, with an unexplained variation of 57%. The F-Statistic of 5.634334 and the matching probability value of 0.00000 infer that the model is all-inclusive and is positive and statistically significant for reliable analysis. The Durbin Watson Statistics of 1.239185 slightly rules out the possible existence of autocorrelation.

Panel Regression Result for Hypothesis Two

H_0: Account payable period have no significant effect on current ratio of listed manufacturing firms in Nigeria

$$LogCR_{it} = \beta_o + \beta_I (LogAPP_{it}) + \beta_2(LogFMZ_{it}) + \beta_3(LogFMG_{it}) + \mu_{it} \ldots\ldots\ldots (2)$$

Table 10: Dependent Variable: LogCR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.824214	1.211489	-1.505762	0.1351
LogAPP	-0.077158	0.054219	-1.423064	0.1577
LogFMZ	0.098048	0.031551	3.107568	0.0024
LogFMG	0.307082	0.233761	1.313656	0.1918
Effects Specification				
R-Squared	0.438095	Durbin-Watson stat		1.272093
F-Statistics	5.847448	Prob(F-statistic)		0.000000

Source: Author's Computation using E-view

The result in Table above showed the estimation result of the effect of account payable period on credit ratio of listed manufacturing firms in Nigeria. Result shows that account payable period (APP) have a negative and non-significant effect on credit ratio (CR) with a co-efficient value of -0.077158 and corresponding probability (Prob) value of 0.1577. Firm size (FMZ) has a positive and significant effect on credit ratio with a co-efficient value of 0.098048 and probability (Prob) value

of 0.0024. While, Firm age (FMG) have a positive and non-significant effect on credit ratio with a co-efficient value of 0.307082 and probability (Prob) value of 0.1918. The R^2 of approximately 44% measures the goodness of fit of the panel regression model also showing the model reliability and the variation in the dependent variable accounted for by the independent variable, with an unexplained variation of 54%. The F-Statistic of 5.847448 and the matching probability value of 0.00000 infer that the model is all-inclusive and is positive and statistically significant for reliable analysis. The Durbin Watson Statistics of 1.272093 slightly rules out the possible existence of autocorrelation. The estimated regression result is reliable for a valid inference on the influence of account payable period on credit ratio (CR) of listed manufacturing firms in Nigeria.

Panel Regression Result for Hypothesis Three

H_0: Cash conversion cycle does not have a significant effect on current ratio of listed manufacturing firms in Nigeria.

$$LogCR_{it} = \beta_o + \beta_I (LogCCC_{it}) + \beta_2(LogFMZ_{it}) + \beta_3(LogFMG_{it}) + \mu_{it} \ldots\ldots\ldots (3)$$

Table 11: Dependent Variable: LogCR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.113047	1.234785	-1.711267	0.0900
LogCCC	0.005985	0.033306	0.179707	0.8577
LogFMZ	0.091431	0.031503	2.902298	0.0045
LogFMG	0.295797	0.235832	1.254271	0.2125
Effects Specification				
R-Squared	0.427434	Durbin-Watson stat		1.244412
F-Statistics	5.598917	Prob(F-statistic)		0.000000

Source: Author's Computation using E-view

The result in Table 11 above showed the estimation result of the effect of cash conversion cycle on credit ratio of listed manufacturing firms in Nigeria. Result shows that cash conversion cycle (CCC) have a positive and non-significant effect on credit ratio (CR) with a co-efficient value of 0.005985 and corresponding probability (Prob) value of 0.8577. Firm size (FMZ) has a positive and significant effect on credit ratio with a co-efficient value of 0.091431 and probability (Prob) value of 0.0045. While, Firm age (FMG) have a positive and non-significant effect on

credit ratio with a co-efficient value of 0.295797 and probability (Prob) value of 0.2125. The R^2 of approximately 43% measures the goodness of fit of the panel regression model also showing the model reliability and the variation in the dependent variable accounted for by the independent variable, with an unexplained variation of 57%. The F-Statistic of 5.598917 and the matching probability value of 0.00000 infer that the model is all-inclusive and is positive and statistically significant for reliable analysis. The Durbin Watson Statistics of 1.244412 slightly rules out the possible existence of autocorrelation.

Discussion of Findings

Based on the outcome of objective one, findings showed that accounts receivable period possesses a negative effect on the current ratio of the studied consumer and industrial goods firms in Nigeria. This finding is in line with findings of Phuong and Hung, 2020 which indicates that there is negative effect of number of day's accounts receivables firms' profitability. However, the study results are inconsistent with the work of Kasahun (2020) which indicates that there is direct effect of accounts receivables and inventory period on firms' profitability. Based on the results, the implication is that the manufacturing firms with lower period of account receivable tends to have a higher liquidity. This implies that firms will have more liquidity to settle their trade creditors which tend to lead to more order and sales of inventories, rapid collection of receivables which improve firms' liquidity. Furthermore, findings showed the effect to be non-significant, this implies that though short account receivable period tends to improve liquidity the impact was not substantial, hence, firms are not to focus on it alone, and considering the volatility of economic and business environments other internal control mechanisms factors can play a crucial role to determine significance on liquidity. One significant reason for this result is the diversified approach towards working capital management embraced by Nigerian firms. These firms may effectively manage other elements of current assets and liabilities, such as inventory and accounts payable, to uphold a consistent current ratio. This adequate management strategy can mitigate the repercussions of delayed collections, ensuring that liquidity is not overly dependent on the efficiency of accounts receivable processes alone.

Generally account receivable management is very crucial for every firm, and should not be neglected by further studies, considering the volatility of business environment, there is need for firms to efficiently manage their receivable collection strategy to enhance liquidity. Findings also indicated that firm size has a positive and significant impact on the current ratio, whereas firm age exhibits a positive yet non-significant influence. The positive and significant effect of firm size on the current ratio implies that larger firms generally possess enhanced liquidity positions. Larger firms typically have more substantial resources and can exploit economies of scale, resulting in reduced costs per unit of output. In contrast, the positive yet non-significant effect of firm age on the current ratio suggests that while older firms may reap the benefits of experience and stability, these factors do not consistently convert into superior liquidity. The longevity of a firm can indeed confer certain advantages, such as established customer bases and accrued expertise. However, these benefits are not assured to significantly influence the current ratio. As outdated technologies, inflexible organizational structures can be a crucial factor too.

Based on the result of objective two, findings revealed that accounts payable period have a negative influence on the current ratio of listed consumer and industrial goods companies in Nigeria. This finding is consistent with the findings Abdeljawad and Dwaikat (2021) who found a negative relationship between account payable and return on equity of Palestine industrial firm and in contrast with the study of Nguyen *et al* (2021) who found a positive relationship to exist between account payable and profitability of food and beverage firms in Vietnam. Based on the results, the implication is that the higher or longer period of account payable has the tendency to lower the liquidity of manufacturing firms. A delayed or reduced payment to suppliers or creditors can harm business relationship, increase borrowing cost and as well limit access to further credits, which has the tendency of reducing the liquidity of firms on the long-run. Nevertheless, the non-significant influence observed in this study can be ascribed to varied nature of operation of different manufacturing firms. Distinct sub-sectors within manufacturing may exhibit differing practices and standards for handling accounts payable. For example, industries characterized by

higher capital intensity may experience extended payable durations due to considerable investments in machinery and raw materials. In contrast, industries with shorter production cycles might uphold shorter payable durations. Also, these firms might emphasize sustaining positive relationships with suppliers, which is essential for guaranteeing a consistent supply of raw materials and upholding production timelines, as well as negotiating advantageous payment terms that do not necessarily extend the accounts payable duration, but offer sufficient flexibility to manage cash flows proficiently. Considering economic uncertainties and level of business failures, account payable period control is a vital credit management strategy for future studies to mitigate credit risk and financial distress. Findings also revealed that firm size has a positive and significant effect on the current ratio, while firm age presents a positive but non-significant effect. The positive and significant effect of firm size on the current ratio suggests that larger firms may frequently possess more established relationships with suppliers and customers, which can result in improved payment terms and more effective cash flow management. These benefits collectively bolster their capacity to manage working capital, contributing to a stronger current ratio. A positive and non-significant effect between firm age and the current ratio indicates that older firms in swiftly changing industries might find it challenging to adjust to new market conditions, undermining any liquidity benefits acquired from their longer operational history.

Based on the findings from objective three, the results indicated that the cash conversion cycle (CCC) exerts a positive influence on the current ratio of selected manufacturing firms in Nigeria. This findings is in line with Finding of this research objective is in agreement with the findings of Mbathi et al. (2021) who found a positive impact between cash conversion and profitability, and Nwokoye (2022), who found a positively impact between cash conversion cycle component (days payable outstanding (DPO)) and performance. This findings is in disagreement with the study of Wang (2019) indicated ta negative link between cash conversion cycle and stock return. This finding implies that an elongation of the cash conversion duration, that is, period required to transform inventory into liquid assets, has the tendency of

increasing liquidity. However, various factors like size of firm, nature of operation may explain this result. This could be the case for Nigerian manufacturing firms that might have relatively stable cash flow management practices, ensuring that changes in the cash conversion cycle do not significantly disrupt their liquidity status. Though the effect was non-significant implies that there is need for firms to shorten their cash conversion cycle to achieve significant liquidity, it can be maintained that shorter cash conversion period can reduce a firm's sole dependency on external sources of financing, which can reduce the cost of financing and interest, henceforth increasing the firm's profitability. Basically, extending the cash conversion cycle, may not necessarily harm liquidity, if the firms have sufficient financial flexibility or access to short-term credit facilities. Another consideration is the overall economic and financial environment in Nigeria, which might affect how firms manage their cash conversion cycles. Economic conditions such as inflation rates, currency volatility, and interest rates can influence the cost and availability of credit, impacting how firms manage their working capital. In such a setting, firms might prioritize maintaining liquidity through means other than optimizing the cash conversion cycle, such as maintaining strong cash reserves or securing stable lines of credit. Findings also indicated that firm size has a positive and significant effect on the current ratio, whereas firm age shows a positive but non-significant effect. While firm size can strongly correlates with better liquidity due to economies of scale, diversified funding, and efficient operations, firm age offers mixed results. The age of a firm can provide stability and experience but does not necessarily guarantee efficient liquidity management.

Conclusion

This study explored the effect of credit management and liquidity position of listed manufacturing firms in Nigeria. Using a panel regression model. The findings indicated that account receivable period, and Account payable period have a negative influence of current ratio, while cash conversion period have a positive influence. Though these effects where not significant, some of the findings where contrary to conventional belief of the longer the payable period the higher the

liquidity of and also the longer the cash conversion cycle, the worse the firm's profitability. Based on this it might be claimed that considering the dynamic economic environments and variation in industrial characteristics, there is need for firms to continuously monitor and optimize their credit management practices, balancing short-term liquidity needs with long-term financial goals. Thai is, a balanced approach to credit management, where firms must not only focus on individual components but also consider their interrelationships and the broader financial and managerial control mechanisms, ranging from Implementing stricter credit policies to enhance collection processes can help firms better manage their receivables and improve liquidity position, balancing extending payment periods of suppliers with maintaining good relationships and credit terms, and managing inventory levels, aligning production with demand, ensuring that resources are not unnecessarily tied up in working capital.

Results of this study, have added knowledge to the previous findings in the field of credit management and current ratio nexus. Future research endeavors can be initiated to explore the impact of external factors such as inflation, interest rates, and exchange rates on the effectiveness of credit management strategies in maintaining liquidity, also further studies can seek to investigate the relationship between credit management components and advanced financial metrics like cash flow ratios, debt service coverage ratios, and working capital turnover ratios.

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