

Working Capital Management and Financing: Implications for Corporate Profitability Among Quoted Consumer Goods Firms in Nigeria

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DOI: 10.56201/ijefm.v11.no7.2026.pg368.380

Abstract

This study examined the effect of working capital management financing on the organizational profitability of listed consumer goods manufacturing companies in Nigeria over the period 2015 to 2024. The study was motivated by the need to provide updated, sector-specific empirical evidence on this relationship in view of the significant macroeconomic disruptions experienced in the Nigerian operating environment in the post-2020 period, and by the inconsistent findings reported in prior Nigerian literature regarding the disaggregated components of working capital financing. Guided by the Cash Conversion Cycle theory, the study adopted an ex-post facto research design and purposively sampled ten consumer goods manufacturing companies listed on the Nigerian Exchange Group, generating a balanced panel of 100 firm-year observations. Secondary data were extracted from the audited annual reports of the sampled companies, and five separate regression models were estimated, one for each of the study's five research hypotheses, with return on assets as the dependent variable and firm size, leverage, and sales growth retained as control variables. Each model was estimated via Pooled OLS, with results cross-checked using Fixed Effects and Random Effects panel estimators, and the Hausman specification test applied to select the preferred estimator. The results showed that average collection period ($B = -0.0657$, $p = 0.008$), inventory conversion period ($B = -0.0672$, $p = 0.0003$), and cash conversion cycle ($B = -0.0613$, $p < 0.001$) each exerted significant negative effects on return on assets, while average payment period exerted a significant positive effect ($B = 0.0396$, $p = 0.044$); the corresponding null hypotheses were therefore all rejected. Current ratio did not exert a statistically significant effect on profitability ($B = 0.338$, $p = 0.709$), and the corresponding null hypothesis was not rejected. The study concluded that working capital management financing is a significant determinant of profitability among listed Nigerian consumer goods manufacturing companies, and recommended that management strengthen receivables and inventory management practices while strategically utilising extended trade credit from suppliers as a cost-effective financing source.

Keywords: Working Capital, Financing, Cash Conversion Cycle, Profitability, Consumer Goods Manufacturing.

Introduction

Organizational profitability is the ultimate measure of a firm's capacity to generate returns from the resources entrusted to it, and it remains the single most important criterion by which shareholders, creditors, regulators, and management judge corporate performance (Pandey, 2021). Profitability, commonly proxied by indicators such as Return on Assets (ROA) and Net Profit Margin (NPM), reflects the efficiency with which an organization converts its assets, sales, and operating decisions into surplus value for its owners (Ross et al., 2022). For manufacturing companies in particular, profitability is not a static outcome but the product of a continuous chain of operating decisions, ranging from procurement and production to credit extension and supplier settlement, all of which converge in what is broadly termed working capital management (Brigham & Houston, 2021). Working capital management financing, understood as the set of decisions governing how a firm funds and administers its short-term assets and liabilities, has therefore attracted sustained attention as a key determinant of organisational profitability (Deloof, 2003). Working capital, defined as the difference between a firm's current assets and current liabilities, represents the pool of resources that sustains the day-to-day operating cycle of a business, including the procurement of raw materials, financing of work-in-progress, extension of trade credit to customers, and settlement of obligations to suppliers (Akinleye & Fajuyagbe, 2021). How a firm chooses to finance this working capital requirement, whether through retained earnings, short-term borrowing, or the deliberate extension of supplier credit, has direct implications for its liquidity position, its cost of capital, and ultimately, its profitability (Nwanyanwu, 2022).

The consumer goods manufacturing sector occupies a strategic position within the Nigerian economy, contributing significantly to Gross Domestic Product, employment generation, and foreign exchange earnings through export activities (Chinedu & Nwosu, 2023). Firms in this sector, many of which are listed on the Nigerian Exchange Group (NGX), operate in an environment characterized by high inventory turnover requirements, extended credit relationships with distributors, and intense competition that constrains pricing flexibility (Bello & Yusuf, 2021). These operational realities make the financing of working capital an especially consequential managerial function, as the sector's profitability is closely tied to how efficiently firms manage and fund their receivables, payables, and inventory (Nwanyanwu, 2022). The relationship between working capital management financing and profitability has attracted sustained scholarly attention since the seminal work of Deloof (2003), who established that a negative relationship exists between the cash conversion cycle and corporate profitability among Belgian firms. This finding has since been replicated, extended, and occasionally contradicted across diverse economic contexts, giving rise to a rich but sometimes inconclusive body of empirical literature (Ogundipe et al., 2022). In the Nigerian context, studies such as those by Akinleye and Fajuyagbe (2021), Oladipupo and Okafor (2022), and Nwanyanwu (2022) have generally corroborated the inverse association between prolonged cash conversion cycles and profitability, although the magnitude and statistical significance of this relationship vary considerably depending on sectoral focus, sample period, and methodological approach adopted.

Despite this growing body of literature, several gaps persist. First, many Nigerian studies have relied on relatively short panel periods or have combined firms across heterogeneous sectors, thereby obscuring sector-specific dynamics that are particularly salient for consumer goods manufacturers (Chinedu & Nwosu, 2023). Second, the disaggregation of working capital management financing into its constituent components, namely the average collection period, average payment period, and inventory conversion period, alongside the aggregate cash conversion cycle measure, is not consistently undertaken, limiting the granularity of policy recommendations (Oladipupo & Okafor, 2022). Third, the post-2020 period, characterised by the compounding effects of the COVID-19 pandemic, currency devaluation,

and heightened inflationary pressures in Nigeria, presents a distinct macroeconomic backdrop that warrants updated empirical investigation (Nwanyanwu, 2022).

Nigerian consumer goods manufacturing companies operate under considerable financial strain arising from foreign exchange volatility, rising input costs, and constrained consumer purchasing power, all of which place a premium on the efficient financing of working capital as a lever for sustaining profitability (Chinedu & Nwosu, 2023). Firms that tie up excessive resources in slow-moving inventory or extend generous credit terms to customers without corresponding efficiency in collections may experience liquidity strain that erodes profitability (Bello & Yusuf, 2021). Conversely, overly conservative working capital financing policies may undermine sales growth and customer relationships, producing an equally adverse effect on profitability (Ogundipe et al., 2022).

Despite the theoretical and practical importance of this trade-off, several Nigerian consumer goods firms continue to report declining profitability margins alongside deteriorating working capital indicators, including lengthening cash conversion cycles and rising average collection periods, as reflected in their published financial statements over the past decade (Nwanyanwu, 2022). This pattern suggests either an inadequate understanding of the profitability implications of working capital financing decisions, or the presence of structural factors that complicate the application of working capital theory in the Nigerian context (Akinleye & Fajuyagbe, 2021). Furthermore, existing Nigerian empirical studies have produced mixed and sometimes contradictory findings regarding the direction and significance of the relationship between specific working capital financing components and profitability, particularly with respect to the average payment period, whose effect on profitability is theoretically ambiguous (Oladipupo & Okafor, 2022). This inconsistency in the literature, combined with the paucity of recent, sector-focused, panel-based studies incorporating post-2020 data, constitutes the research problem this study seeks to address.

It is against this background that the present study investigates the effect of working capital management financing on the organisational profitability of listed consumer goods manufacturing companies in Nigeria, using panel data techniques to test the effect of each working capital financing component on firm profitability.

Study Objectives

The general objective of this study is to examine the effect of working capital management financing on the organisational profitability of listed consumer goods manufacturing companies in Nigeria. The specific objectives are to: examine the effect of average collection period on the profitability of listed consumer goods manufacturing companies in Nigeria; determine the effect of average payment period on the profitability of listed consumer goods manufacturing companies in Nigeria; assess the effect of inventory conversion period on the profitability of listed consumer goods manufacturing companies in Nigeria; investigate the effect of the cash conversion cycle on the profitability of listed consumer goods manufacturing companies in Nigeria; and evaluate the effect of the current ratio on the profitability of listed consumer goods manufacturing companies in Nigeria.

The following null hypotheses are formulated to guide the study:

H01: Average collection period has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H02: Average payment period has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H03: Inventory conversion period has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H04: Cash conversion cycle has no significant effect on the profitability of listed consumer

goods manufacturing companies in Nigeria.

H05: Current ratio has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Literature Review

Working Capital Management Financing

Working capital management financing refers to the set of managerial decisions and policies concerning the level and financing of a firm's current assets and current liabilities, with the objective of ensuring that the firm maintains sufficient liquidity to meet its short-term obligations while simultaneously deploying resources efficiently to maximise profitability (Akinleye & Fajuyagbe, 2021). At its core, working capital management financing involves a continuous trade-off between liquidity and profitability: holding excessive current assets enhances liquidity but ties up resources that could otherwise generate returns, while minimising current assets improves profitability at the risk of compromising the firm's ability to meet operational and financial obligations (Nwanyanwu, 2022).

Ogundipe et al. (2022) describe working capital management as encompassing the administration of all components of current assets and current liabilities in a manner that optimises the operating cycle, thereby minimising the time between cash outflows for inputs and cash inflows from sales. This administration typically involves decisions relating to inventory policy, credit policy extended to customers, and the negotiation of payment terms with suppliers, each of which interacts with the others to determine the overall length of the firm's cash conversion cycle.

Components of Working Capital Management Financing

Average Collection Period (ACP): Measures the efficiency of a firm's credit and collection policies, representing the average number of days that elapse between a credit sale and the receipt of cash from the customer. A shorter ACP is generally associated with more efficient receivables management and improved liquidity (Oladipupo & Okafor, 2022).

Average Payment Period (APP): Captures the average duration a firm takes to settle its obligations to trade creditors. The theoretical effect of APP on profitability is ambiguous: a longer APP may enhance profitability by allowing the firm to utilise supplier-financed funds for longer periods, functioning as a form of interest-free financing, but it may also signal liquidity distress or damage supplier relationships (Chinedu & Nwosu, 2023).

Inventory Conversion Period (ICP): Measures the average number of days that inventory remains in stock before being sold. For manufacturing firms, an extended ICP typically reflects either weak demand, overproduction, or inefficient inventory management, all of which tie up working capital in non-earning assets and are generally associated with reduced profitability (Bello & Yusuf, 2021).

Cash Conversion Cycle (CCC): Aggregates the three preceding measures into a single composite indicator: $CCC = ACP + ICP - APP$. The CCC represents the net time interval between a firm's cash outlay for production inputs and the ultimate collection of cash from the sale of the resulting output (Richards & Laughlin, 1980; Deloof, 2003).

Current Ratio (CR): Computed as current assets divided by current liabilities, provides a broader liquidity indicator that captures the overall adequacy of a firm's short-term assets relative to short-term obligations (Akinleye & Fajuyagbe, 2021).

Organizational Profitability

Organizational profitability refers to a firm's capacity to generate earnings relative to its revenue, assets, or equity over a given period, and it remains the principal indicator of managerial effectiveness and long-term corporate viability (Pandey, 2021). Return on Assets (ROA), computed as net profit after tax divided by total assets, measures the efficiency with which a firm's total asset base is deployed to generate earnings, and it is widely regarded as a comprehensive indicator of overall operational performance (Ogundipe et al., 2022).

Theoretical Framework

This study adopts the Cash Conversion Cycle theory, advanced by Richards and Laughlin (1980), as its principal theoretical framework. The theory posits that the length of time between a firm's cash outlay for productive inputs and its cash recovery from the sale of output is a critical determinant of the firm's liquidity and, by extension, its profitability. This theory directly underpins the specification of the cash conversion cycle as a central explanatory variable in the present study.

Empirical Review

Oladipupo and Okafor (2022) examined the disaggregated components of working capital among Nigerian industrial firms and found that the average collection period exerted a significant negative effect on profitability. Akinleye and Fajuyagbe (2021) similarly reported a negative association between receivables collection periods and profitability among listed Nigerian manufacturing firms. Chinedu and Nwosu (2023), studying Nigerian consumer goods firms specifically, found that the average collection period retained a significant negative effect on profitability even after controlling for firm size and leverage.

Oladipupo and Okafor (2022) found that the average payment period demonstrated a significant positive effect on profitability among Nigerian industrial firms, interpreting this as evidence that firms were successfully utilising trade credit as a low-cost financing source. Chinedu and Nwosu (2023) reported a similarly positive relationship among Nigerian consumer goods firms. Akinleye and Fajuyagbe (2021), by contrast, found a comparatively weaker relationship, attributing this to variation in supplier bargaining power.

Bello and Yusuf (2021), in a study of inventory management practices among Nigerian food and beverage manufacturers, found that the inventory conversion period was significantly and negatively associated with both return on assets and net profit margin. Nwanyanwu (2022) corroborated this finding within the broader Nigerian consumer goods sector, reporting that firms with prolonged inventory holding periods experienced materially reduced profitability.

Akinleye and Fajuyagbe (2021) found that the current ratio exhibited a positive but comparatively weak and often statistically insignificant association with profitability. Ogundipe et al. (2022) reported a similarly weak and inconsistent effect once firm-specific heterogeneity was controlled for using panel estimators. Pandey (2021) observes that the current ratio, while a useful general indicator of solvency, is a comparatively blunt instrument for capturing the specific profitability effects of working capital financing decisions.

Methodology

This study adopts the ex-post facto research design. The ex-post facto design is widely employed in corporate finance research investigating relationships between financial variables using secondary data (Akinleye & Fajuyagbe, 2021). The population comprises all consumer goods manufacturing companies listed on the Nigerian Exchange Group (NGX) as at 31 December 2024, totalling twenty (20) listed companies. The study adopts a purposive sampling technique to select ten (10) consumer goods manufacturing companies based on the following criteria: (i) continuous listing on the NGX throughout the entire study period, 2015

to 2024; (ii) consistent availability and accessibility of audited annual reports; and (iii) classification as a manufacturing entity within the consumer goods sector. The application of these criteria yielded a balanced panel dataset of 100 firm-year observations (10 firms $\times$ 10 years). The study relies exclusively on secondary data extracted from the audited annual reports and financial statements of the sampled companies, covering the financial years 2015 to 2024. These reports were obtained from the respective companies' investor relations portals, the Nigerian Exchange Group's corporate disclosure archive, and the Nigerian Exchange Fact Book.

Model Specification

To achieve the study's objectives and test each of the five research hypotheses independently, five separate panel regression models are specified, one for each working capital management variable. In every model, return on assets (ROA) is the dependent variable, and firm size, leverage, and sales growth are retained as control variables.

$$ROA_{it} = \beta_0 + \beta_1 ACP_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

$$ROA_{it} = \beta_0 + \beta_1 APP_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \dots\dots\dots (2)$$

$$ROA_{it} = \beta_0 + \beta_1 ICP_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \dots\dots\dots (3)$$

$$ROA_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \dots\dots\dots (4)$$

$$ROA_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \dots\dots\dots (5)$$

where i denotes the firm ($i = 1, 2, \dots, 10$), t denotes the year ($t = 2015, \dots, 2024$), β_0 is the constant term, and ε_{it} is the stochastic error term.

The study employs panel data regression analysis, applying three estimation techniques: Pooled Ordinary Least Squares (OLS), Fixed Effects (Least Squares Dummy Variable / within) estimator, and Random Effects (Generalised Least Squares) estimator. The Hausman (1978) specification test is employed to determine the more appropriate and consistent estimator between the fixed effects and random effects models for each model specification. All statistical analyses are performed using Python (version 3.12), utilising the statsmodels and linearmodels libraries.

A Priori Expectation

Consistent with the Cash Conversion Cycle theory and the weight of prior empirical evidence, the study holds the following a priori expectations: ACP (negative), ICP (negative), CCC (negative), CR (positive), APP (ambiguous), FSIZE (positive), LEV (negative), and GROWTH (positive).

Results and Discussion

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum	Skewness
ROA (%)	17.11	3.65	9.58	23.46	-0.15
ACP (days)	51.94	11.47	33.60	79.70	0.51
APP (days)	70.98	17.08	35.00	112.90	0.12
ICP (days)	75.75	18.86	40.60	123.60	0.35
CCC (days)	56.71	23.89	-3.10	108.90	-0.40
CR (times)	1.37	0.27	0.76	1.89	-0.40
FSIZE (Ln Assets)	11.15	0.83	9.55	12.43	-0.45
LEV (ratio)	0.52	0.10	0.28	0.73	-0.42
GROWTH (%)	7.81	10.16	-18.92	29.41	-0.03

The mean Return on Assets across the sampled firms stands at 17.11%, with a standard deviation of 3.65, indicating a moderate degree of variability in profitability performance. The mean cash conversion cycle of approximately 56.71 days suggests that, on average,

sampled firms require nearly two months to convert their working capital investments into cash inflows from sales. All variables exhibit skewness values within the acceptable range of -1 to +1, supporting the appropriateness of the regression techniques employed.

Table 2: Pearson Correlation Matrix

	ROA	ACP	APP	ICP	CCC	CR	FSIZE	LEV	GROWTH
ROA	1.000								
ACP	-0.205	1.000							
APP	0.433	0.251	1.000						
ICP	-0.306	0.311	0.379	1.000					
CCC	-0.649	0.546	-0.295	0.668	1.000				
CR	0.210	-0.025	0.268	0.080	-0.141	1.000			
FSIZE	-0.079	-0.021	-0.451	-0.140	0.201	-0.300	1.000		
LEV	-0.073	0.369	0.268	0.053	0.028	0.323	-0.446	1.000	
GROWTH	0.055	0.056	-0.113	0.030	0.131	0.037	0.053	0.026	1.000

The correlation matrix reveals a moderately strong negative correlation between the cash conversion cycle and return on assets ($r = -0.649$), providing preliminary support for the study's central hypothesis that prolonged working capital cycles are associated with diminished profitability. None of the pairwise correlations among the independent variables approaches the conventional threshold of 0.80 that would signal a severe multicollinearity concern.

Test of Hypotheses

H01: Average collection period has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Table 3: Model Summary - H01 (ACP)

R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
0.237	0.056	0.016	3.619	0.608

Table 4: ANOVA - H01 (ACP)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	73.997	4	18.499	1.413	0.236
Residual	1243.934	95	13.094		
Total	1317.931	99			

Table 5: Coefficients - H01 (ACP)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	26.599	6.731		3.952	0.000
ACP	-0.061	0.035	-0.192	-1.759	0.082
FSIZE	-0.489	0.497	-0.112	-0.985	0.327
LEV	-2.068	4.640	-0.054	-0.446	0.657
GROWTH	0.026	0.036	0.073	0.729	0.468

Table 6: Panel Robustness Check - H01 (ACP)

Estimator	Coefficient (ACP)	Std. Error	t	Sig.
Fixed Effects	-0.0675	0.0236	-2.859	0.005
Random Effects (preferred)	-0.0657	0.0241	-2.727	0.008

Hausman Test: Chi-Square (5) = 1.636, $p = 0.897$ — Random Effects estimator preferred.

Interpretation: The Model Summary shows that the average collection period, together with the control variables, accounts for a modest 5.6% of the variation in return on assets (R Square = 0.056). The ANOVA table indicates that the pooled model as a whole is not

statistically significant at the 5% level ($F = 1.413$, $p = 0.236$). In the pooled OLS coefficients table, the ACP coefficient narrowly misses conventional significance ($B = -0.061$, $p = 0.082$). However, once unobserved firm-specific heterogeneity is properly accounted for through the panel Random Effects estimator, identified as the preferred model by a non-significant Hausman test ($p = 0.897$), the average collection period exerts a negative and statistically significant effect on return on assets ($B = -0.0657$, $p = 0.008$).

Decision: The null hypothesis H01 is rejected. Average collection period has a significant negative effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H02: Average payment period has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Table 7: Model Summary - H02 (APP)

R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
0.493	0.243	0.211	3.241	0.802

Table 8: ANOVA - H02 (APP)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	319.795	4	79.949	7.609	0.000
Residual	998.136	95	10.507		
Total	1317.931	99			

Table 9: Coefficients - H02 (APP)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	9.132	6.912		1.321	0.190
APP	0.113	0.022	0.527	5.220	0.000
FSIZE	0.301	0.474	0.069	0.635	0.527
LEV	-7.123	3.825	-0.187	-1.862	0.066
GROWTH	0.042	0.032	0.116	1.285	0.202

Table 10: Panel Robustness Check - H02 (APP)

Estimator	Coefficient (APP)	Std. Error	t	Sig.
Fixed Effects	0.0339	0.0217	1.566	0.121
Random Effects (preferred)	0.0396	0.0194	2.041	0.044

Hausman Test: Chi-Square (5) = 3.843, $p = 0.572$ — Random Effects estimator preferred.

Interpretation: The Model Summary for Hypothesis Two shows a considerably stronger fit than the ACP model, with the average payment period and control variables jointly explaining 24.3% of the variation in return on assets ($R\text{ Square} = 0.243$). The ANOVA table confirms that this model is highly statistically significant as a whole ($F = 7.609$, $p < 0.001$). In the pooled OLS coefficients table, the average payment period exerts a positive and highly significant effect on return on assets ($B = 0.113$, $p < 0.001$), a result corroborated by the Random Effects panel estimate ($B = 0.0396$, $p = 0.044$), which the non-significant Hausman test ($p = 0.572$) confirms as the preferred estimator.

Decision: The null hypothesis H02 is rejected. Average payment period has a significant positive effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H03: Inventory conversion period has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Table 11: Model Summary - H03 (ICP)

R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
0.361	0.130	0.094	3.473	0.662

Table 12: ANOVA - H03 (ICP)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	171.957	4	42.989	3.564	0.009
Residual	1145.974	95	12.063		
Total	1317.931	99			

Table 13: Coefficients - H03 (ICP)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	34.002	6.802		4.999	0.000
ICP	-0.063	0.019	-0.328	-3.388	0.001
FSIZE	-0.849	0.474	-0.194	-1.791	0.077
LEV	-5.499	4.083	-0.144	-1.347	0.181
GROWTH	0.028	0.035	0.079	0.818	0.416

Table 14: Panel Robustness Check - H03 (ICP)

Estimator	Coefficient (ICP)	Std. Error	t	Sig.
Fixed Effects	-0.0655	0.0213	-3.071	0.003
Random Effects (preferred)	-0.0672	0.0179	-3.751	0.0003

Hausman Test: Chi-Square (5) = 0.468, $p = 0.993$ — Random Effects estimator preferred.

Interpretation: The Model Summary shows that the inventory conversion period and control variables jointly explain 13.0% of the variation in return on assets (R Square = 0.130), with the ANOVA table confirming that the overall model is statistically significant ($F = 3.564$, $p = 0.009$). The pooled OLS coefficients table shows that the inventory conversion period exerts a negative and highly significant effect on return on assets ($B = -0.063$, $p = 0.001$), strongly corroborated by the panel Random Effects estimate ($B = -0.0672$, $p = 0.0003$), the estimator preferred by an overwhelmingly non-significant Hausman test ($p = 0.993$).

Decision: The null hypothesis H03 is rejected. Inventory conversion period has a significant negative effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H04: Cash conversion cycle has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Table 15: Model Summary - H04 (CCC)

R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
0.668	0.446	0.422	2.773	0.886

Table 16: ANOVA - H04 (CCC)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	587.266	4	146.816	19.089	0.000
Residual	730.665	95	7.691		
Total	1317.931	99			

Table 17: Coefficients - H04 (CCC)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	22.089	5.187		4.258	0.000
CCC	-0.103	0.012	-0.672	-8.485	0.000
FSIZE	0.122	0.386	0.028	0.315	0.753
LEV	-1.757	3.287	-0.046	-0.534	0.594
GROWTH	0.051	0.028	0.143	1.850	0.067

Table 18: Panel Robustness Check - H04 (CCC)

Estimator	Coefficient (CCC)	Std. Error	t	Sig.
Fixed Effects	-0.0536	0.0157	-3.422	0.001
Random Effects (preferred)	-0.0613	0.0131	-4.676	0.000

Hausman Test: Chi-Square (5) = 5.183, $p = 0.394$ — Random Effects estimator preferred.

Interpretation: The Model Summary for Hypothesis Four shows the strongest explanatory power among all five models, with the cash conversion cycle and control variables jointly explaining 44.6% of the variation in return on assets (R Square = 0.446, Adjusted R Square = 0.422). The ANOVA table confirms that this model is highly statistically significant as a whole ($F = 19.089$, $p < 0.001$). The pooled OLS coefficients table shows that the cash conversion cycle exerts a negative and highly significant effect on return on assets ($B = -0.103$, $p < 0.001$), the largest standardised effect (Beta = -0.672) among all five hypothesis models, confirmed by the panel Random Effects estimate ($B = -0.0613$, $p < 0.001$), the estimator preferred by a non-significant Hausman test ($p = 0.394$).

Decision: The null hypothesis H04 is rejected. Cash conversion cycle has a significant negative effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

H05: Current ratio has no significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Table 19: Model Summary - H05 (CR)

R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson
0.276	0.076	0.037	3.580	0.700

Table 20: ANOVA - H05 (CR)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	100.302	4	25.076	1.956	0.108
Residual	1217.629	95	12.817		
Total	1317.931	99			

Table 21: Coefficients - H05 (CR)

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	21.016	7.121		2.951	0.004
CR	3.324	1.456	0.242	2.283	0.025
FSIZE	-0.426	0.493	-0.097	-0.863	0.390
LEV	-7.484	4.312	-0.196	-1.736	0.086
GROWTH	0.020	0.036	0.056	0.566	0.573

Table 22: Panel Robustness Check - H05 (CR)

Estimator	Coefficient (CR)	Std. Error	t	Sig.
Fixed Effects	0.2756	0.7660	0.360	0.720
Random Effects (preferred)	0.3380	0.9015	0.375	0.709

Hausman Test: Chi-Square (5) = 3.732, $p = 0.589$ — Random Effects estimator preferred.

Interpretation: The Model Summary for Hypothesis Five shows that the current ratio and control variables jointly explain only 7.6% of the variation in return on assets ($R^2 = 0.076$), the second-weakest fit among the five models, and the ANOVA table confirms that the model as a whole is not statistically significant at the 5% level ($F = 1.956$, $p = 0.108$). Although the pooled OLS coefficient on the current ratio itself appears nominally significant ($B = 3.324$, $p = 0.025$), this result does not survive the panel data robustness check: both the Fixed Effects estimate ($B = 0.2756$, $p = 0.720$) and the preferred Random Effects estimate ($B = 0.3380$, $p = 0.709$), selected on the basis of a non-significant Hausman test ($p = 0.589$), are statistically insignificant once unobserved firm-specific heterogeneity is properly controlled for.

Decision: The null hypothesis H_{05} is not rejected. Current ratio does not have a statistically significant effect on the profitability of listed consumer goods manufacturing companies in Nigeria.

Discussion of Findings

The findings of this study provide strong empirical support for the theoretical proposition, anchored in the Cash Conversion Cycle theory, that efficient working capital management is a significant determinant of profitability among listed Nigerian consumer goods manufacturing companies. The significant negative relationship between the cash conversion cycle and return on assets confirmed under Hypothesis Four is consistent with the findings of Deloof (2003) in the Belgian context and corroborates the Nigerian evidence reported by Akinleye and Fajuyagbe (2021) and Nwanyanwu (2022), reinforcing the generalisability of this relationship across both developed and emerging market manufacturing contexts.

The individual hypothesis models offer additional nuance beyond what the aggregate CCC measure alone can reveal. The significant negative effect of the average collection period confirmed under Hypothesis One aligns with the findings of Oladipupo and Okafor (2022) and supports the theoretical expectation that delayed customer collections erode profitability by tying up funds that could otherwise be deployed productively. Similarly, the significant negative effect of the inventory conversion period confirmed under Hypothesis Three corroborates the findings of Bello and Yusuf (2021) regarding the profitability costs of prolonged inventory holding among Nigerian food and beverage manufacturers.

The positive and significant coefficient on the average payment period confirmed under Hypothesis Two is of particular interest, as it diverges from a naive expectation that delayed supplier payments would be uniformly detrimental to firm relationships and, by extension, profitability. Instead, this finding aligns with Oladipupo and Okafor (2022) in suggesting that Nigerian consumer goods manufacturers appear to derive a net financing benefit from extending their payment periods to suppliers, consistent with the theoretical view of trade credit as a relatively low-cost, flexible source of working capital financing.

The failure to reject H_{05} with respect to the current ratio is a notable finding that recurs across both the aggregate and disaggregated approaches to this study. It suggests that, within the sampled firms, a broad liquidity buffer of current assets over current liabilities does not, in itself, translate into significantly higher or lower profitability once firm-specific heterogeneity and the more specific cash-cycle-based measures of working capital efficiency are properly accounted for. This finding is consistent with the trade-off theory's characterisation of the current ratio as a liquidity indicator whose profitability implications are inherently more diffuse and context-dependent than the more direct, cycle-based measures of receivables, payables, and inventory management tested under Hypotheses One to Four. The consistent preference for the Random Effects estimator across all five Hausman tests indicates that, for this sample, the unobserved firm-specific effects are uncorrelated with the regressors in each model, lending confidence to the efficiency as well as the consistency

of the Random Effects coefficients on which the study's hypothesis testing decisions are based. The pattern of results, in which single-predictor pooled OLS models frequently understate the significance of the true panel relationship (most notably for ACP, where pooled OLS narrowly fails to achieve significance at the 5% level while the panel Random Effects model achieves $p = 0.008$), further illustrates the analytical value of supplementing conventional cross-sectional regression output with proper panel data estimation when working with repeated firm-year observations.

Conclusion and Recommendations

Based on the findings of this study, it is concluded that working capital management is a significant determinant of the profitability of listed consumer goods manufacturing companies in Nigeria. Specifically, the study concludes that firms which manage their cash conversion cycles more efficiently, characterised by shorter collection and inventory holding periods and an appropriately extended payment period, tend to achieve superior profitability outcomes relative to firms with less efficient working capital practices. The study further concludes that broad liquidity, as captured by the current ratio, is a comparatively weaker and statistically insignificant predictor of profitability relative to the more specific, cycle-based measures of working capital efficiency, suggesting that Nigerian consumer goods manufacturers seeking to enhance profitability should prioritise the active management of receivables, inventory, and payables over the pursuit of a particular target current ratio in isolation.

Based on the findings and conclusions of this study, the following recommendations are made:

- i. Management of listed consumer goods manufacturing companies should strengthen credit management and collection policies, including the implementation of more rigorous customer creditworthiness assessment and the deployment of structured follow-up mechanisms for outstanding receivables, in order to reduce the average collection period and its associated drag on profitability.
- ii. Management should pursue more efficient inventory management practices, including improved demand forecasting and the adoption of modern inventory control systems, to reduce the inventory conversion period and minimise the profitability costs associated with prolonged inventory holding.
- iii. Given the significant positive relationship identified between the average payment period and profitability, management should, within the bounds of maintaining sound supplier relationships, seek to negotiate reasonably extended payment terms with suppliers, thereby utilising trade credit as a cost-effective source of working capital financing, while remaining alert to the risk that excessively long payment periods beyond prevailing market norms could damage supplier relationships or forfeit early-payment discounts.
- iv. Given the statistically insignificant effect of the current ratio observed in this study, firms should avoid an excessive focus on maintaining high current ratios as an end in itself, and should instead direct managerial attention toward the specific components of the cash conversion cycle that this study has shown to bear a more direct and significant relationship with profitability.
- v. Regulatory bodies, including the Securities and Exchange Commission and the Nigerian Exchange Group, should consider encouraging enhanced disclosure of working capital metrics, including the cash conversion cycle and its components, within the annual reports of listed manufacturing companies, to facilitate more informed benchmarking and investment analysis by stakeholders.

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