



# WORKING CAPITAL MANAGEMENT AND FIRMS' FINANCIAL PERFORMANCE: EVIDENCE FROM LISTED NIGERIAN FIRMS

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## ABSTRACT

This study investigated the influence of Working Capital Management (WCM) on the financial performance of publicly listed companies in Nigeria. The analysis of secondary data from the period of 2012 to 2021 employed the utilization of cash conversion cycle, Account Receivable Management, and Account Payable Management metrics. The findings of the study indicate that there is statistically significant relationship between the cash conversion cycle and financial performance. The management of cash conversion cycle, accounts receivable and accounts payable showed a statistically significant impact on the financial performance of publicly traded companies in Nigeria. The study therefore suggests that firms should maintain an optimal level of working capital in order to maximize their overall value. Additionally, the effective management of cash flow is deemed to be of utmost importance for organizations while maintaining a balanced working capital management, with particular focus on managing account receivables, payables, and inventory. This is because efficient working capital management is anticipated to have a beneficial influence on the market value of firm.

## KEYWORDS

Working Capital Management, Return on Assets, Cash Conversion Cycle, Account Payable Management, Account Receivable Management.

**JEL Classification:** G31, G32, M41



## 1.0 Introduction

Service-oriented firms are known to have different objectives from manufacturing and product distribution organizations in terms of their operations. This is because consumers often make immediate payments for services, but this may not always apply to goods produced and delivered, this potent mode of operation leads to a debtor-creditor dynamic. The goal is to ensure sufficient cash flow to meet immediate cash obligations, maintain liquidity, and ensure business sustainability. Abubakar, Nordin and Umar, (2023) emphasizes the importance of evaluating debt and credit levels to prevent excessive cash reserves or insufficient funds for daily operational needs. Financial management involves facilitating capital provision to firms, executing strategies to enhance organizational strategic efficiency, and supervising commercial operations (Kolapo, Oke, & Ajayi, 2015). These covers issues like long-term expenditures, funding strategies, short-term financial management (working capital management), and considerations like buybacks, mergers, and share repurchases.

Working Capital Management (WCM) involves overseeing and maintaining firms' current assets including monetary resources and securities as it is adjudged to be a financial mechanism that ensures immediate liabilities do not exceed assets. Its goal is aimed toward striking a balance between risk avoidance and excessive investments as an efficient WCM significantly impacts on a firm's financial performance, particularly on its revenue generation (Sani, Jibril, & Bakare, 2023). Numerous studies had examined the impact of Working Capital Management and its effect on the performances of business while highlighting the importance of avoiding risks associated short-term excessive investments (Ironkwe&Wokoma, 2017; Yakubu, Dangana, & Umaru, 2020; Sani, et al, 2023). This involves overseeing and maintaining a profitable current asset, including monetary resources and securities which ensures that immediate liabilities do not exceed these assets. Thus, effective WCM is crucial for a firm's financial success. The goal of such financial management also ensures the avoidance of excessive investments in volatile assets because its outcome significantly impacts on a firm's overall financial performance, particularly revenue generation.

## 2.0 Literature Review

### 2.1 Working Capital Management

The primary goal of WCM's establishment is to priorities the firms' ongoing stability and ensure the availability of sufficient liquid assets to meet its immediate obligations (Adekola, Samy & Knight, 2017). Ibrahim and Isiaka (2021) emphasizes the importance of WCM in financial management, as it significantly impacts a firm's financial success. An effective WCM strategy according to Simon, Sawandi and Abdul-Hamid (2018) enhances a firm's overall worth by maintaining a balance between assets, liabilities, and working capital. It involves the efficient utilization and coordination of a firm's resources while ensuring its market presence. This also involves understanding how these components function, interact, and align with each other to effectively meet the organization's objectives of financial stability, including firms' profitability and the management of its inventory (raw materials, work-in-progress, and finished goods) and products (Umar& Al-Faryan, 2023). Additionally, they include the management of accounts receivable and accounts payable, which pertains to the sums reclaimed and owed to other companies and individuals as a result of the firm's regular business operations (Umenzekwe, Okoye &Aggreh, 2021). Effective cash management necessitates the development of measures aimed at promoting prompt debt recovery owed the firms, as well as offsetting payments for credit provided by other firms (Ibrahim & Dengel, 2021). Consequently, enterprises are able to possess the necessary financial resources to fulfill their immediate obligations of debt repayment at their maturity.

## **2.2 Measures of Working Capital Management**

### **2.2.1 Cash Conversion Cycle**

Cash Conversion Cycle (CCC), sometimes referred to as 'the net operating cycle' or 'cash cycle', is a management accounting mechanism utilized to evaluate the duration required for a corporation to convert its assets and other inputs into revenue. The credit recovery strategy of an organization may impact on its ability to convert account receivables into cash by affecting the frequency of such conversions (Ibrahim, et al, 2021). Implementing a strategic plan to provide clients with a more adaptable timeframe could increase profitability but may also reduce liquidity. The CCC is a crucial measure used in identifying areas that require additional funding and predicting possible financial performance deficits. The CCC model, developed by Gitman (1974), analyzes the duration of time required for a firm to receive payments for goods sold or supplied. Some scholars have suggested that conventional financial accounting metrics, such as the current ratio or the acid-test ratio, are inadequate due to their failure to account for the dynamic nature of capital flows, while others suggest that the conversion of current assets into cash requires a certain amount of time, making the CCC a more suitable approach for evaluating a firm's solvency levels (Ironkwe, et al, 2017; Umenzekwe, et al, 2021; Okobo, Ugwoke & Akpan, 2022).

### **2.2.2 Accounts Receivable Management**

In financial accounting, the term "accounts receivable" pertains to the amounts that a firm is entitled to receive from its customers or clients, with whom it has engaged in credit transactions for the acquisition of goods or services. When firms extend credit to their consumers, they establish accounts receivable, signifying that the current transaction will generate future cash inflows (Sinebe & Efenudu, 2022). The evaluation of a firm's solvency sometimes involves consideration of accounts receivables or trade creditors, which are commonly displayed as current assets on a firm's financial statement (Kolapo, et al, 2015; Sinebe, 2020). Accounts receivable management refers to the systematic procedure employed to ensure timely payment of invoices by clients and trade creditors. According to Ibrahim, et al (2021), the implementation of a proficient and streamlined accounts receivable management system enables an organization to anticipate and manage its cash flow effectively. Consequently, this practice safeguards the organization from experiencing a depletion of its working capital.

Sani, et al, (2023) argues that the use of efficient accounts receivable management practices can enhance a firms' liquidity and financial position, mitigate the occurrence of client non-payment for long-standing invoices, and decrease the occurrence of bad debts and dubious accounts. An effective approach to accounts receivable management encompasses not just the tasks of reminding and collecting payments from customers, but also include investigating and identifying the underlying causes of payment delays, as well as devising appropriate solutions to address these issues.

### **2.2.3 Accounts Payable Management**

In the practice of accounting, the term "accounts payable" is used to denote the entries into a firm's general ledger that represent the firm's obligation to fulfill a current debt owed to one of its creditors or vendors. Accounts payables refer to the liabilities incurred by an entity through the acquisition of products or services from vendors or merchants. It is imperative that these obligations be settled in their entirety within a stipulated timeframe to prevent default (Ironkwe et al, 2017). Accounts payable management refers to the organized and methodical handling of a firm's outstanding debts to suppliers and other external entities for the acquisition of products and services on credit. According to Simon, et al, (2018), account payables management refers to the strategic



Given the above,  $WCM_{it}$  is defined and measured as follows:

Working Capital Management ( $WCM_{it}$ ) = F (CCC, ARM and APM)

FP is defined and measured as: Financial Performance (FP) = F (ROA)

Where:  $ROA_{it}$  = Return on Assets (measured by dividing a firm's net income by the average of its total assets)

$CCC_{it}$  = Cash Conversion cycle (the Days Inventory Outstanding + Days Sales Outstanding - Days Payables Outstanding)

$ARM_{it}$  = Account Receivable Management (credit sales divided by the outstanding accounts on your balance sheet.)

$APM_{it}$  = Account Payable Management (**Accounts Payable Days x Value of Item Sale / 365**)

$U_t$  = Error Terms

$it$  = Firms at time t.

$a_0, a_1, a_2, a_3$  = Regressors

## 4.0 Results and Discussion of Findings

### 4.1 Descriptive Statistics

**Table1: Summary of Descriptive Statistics**

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA	683	1.83811	16.99731	-179.9173	176.2669
CCC	683	-180.2909	2525.266	-51443.24	2723.83
ARM	683	0.01809	0.39995	-3.29	0.94
APM	683	27.42131	30.9964	-306.7095	100

Source: Researcher's Computation, 2023

Table 1, presents a comprehensive examination of the descriptive statistics pertaining to the variables being examined. The mean of the dependent variable, ROA, is 1.83811, with a standard deviation of 16.99731. This suggests that there is considerable variability within the dataset. The minimum value of ROA is -179.9173, while the maximum value is 176.2669. The corresponding mean and standard deviations for the variables CCC, ARM, and APM are as follows: CCC has a mean of -180.2909 and a standard deviation of 2525.266, ARM has a mean of 0.01809 and a standard deviation of 0.39995 while APM has a mean of 27.42131 and a standard deviation of 30.9964. The observed maximum values in the dataset are 2723.83, 0.94, and 100 with the corresponding minimum values of -51443.24, -3.24, and -306.7095, respectively.

### 4.2 Correlation Analysis

**Table 2: Correlation Analysis**

Variable	ROA	CCC	ARM	APM
ROA	1.0000			
CCC	0.0560	1.0000		
ARM	0.3573	0.2120	1.0000	
APM	0.3169	0.0706	0.3614	1.0000

Source: Researcher's Computation, 2023

The findings of the investigation demonstrate a significant correlation between Return on Assets (ROA) and various Working Capital Management (WCM) indicators, including the Cash Conversion Cycle (CCC), Accounts Receivable Management (ARM), and Accounts Payable Management (APM). The independent variables did not show any sign of multicollinearity, as indicated by the Pearson Correlation (Pearson R) values. The correlation coefficient between ROA and CCC was 0.0560, indicating a weak positive relationship, while the correlation coefficient between ROA and ARM and between ROA and APM was 0.3573 and 0.3169 respectively, indicating a moderate positive relationship. No independent variables showed a Pearson correlation coefficient of around 0.80 or higher. Further diagnostic testing is also carried out to validate this result.

#### 4.3 Other Diagnostic Tests

In order to assess the efficacy of the models, the obtained data underwent additional analysis to examine multicollinearity, heteroskedasticity, and random effects testing within the panel data. The results of the fundamental diagnostic examinations are outlined below.

**Table 3: Variance Inflation Factor Results for Independent Variables**

Variable	ARM	APM	CCC	Mean VIF
VIF	1.20	1.15	1.05	1.13
1/VIF	0.834477	0.869376	0.955030	

*Source: Researcher's Computation, 2023.*

The obtained mean Variance Inflation Factor (VIF) of 1.13 indicates the absence of multicollinearity among the independent variables, hence confirming the suitability of the given models for this study.

**Table 4. Breusch and Pagan Lagrangian Multiplier test**

Breusch Pagan Cooke/Weisberg	
Test for Heteroskedasticity	chi2(1) = 1505.06; Prob>chi2= 0.0000

*Source: Researcher's compilation, 2023.*

The Breusch and Pagan Lagrange multiplier test was employed in this work to ascertain the optimal model selection between pooled regression and random effects. The chi-square test result ( $\chi^2$ ) obtained for the fitted variables was 1505.06, suggesting a statistically significant relationship. The obtained p-value of 0.0000 provides strong evidence to support the conclusion that there are no heteroskedasticity concerns present in the dataset. The random effect model was therefore determined to be appropriate for conducting data analysis.

#### 4.4 Test of Hypothesis I (ROA and CCC)

H<sub>01</sub>: There is no significant relationship between cash conversion cycle and financial performance of quoted firms in Nigeria

**Table 5: Results of Model I**

Dependent Variable: Financial Performance (ROA) No. of Obs. = 683					
Variables	Symbol	Coefficient	Std. Err	t-Statistics	Sign.
Constant	CONS	1.90606	0.65149	2.93	0.004
Cash Conversion Cycle	(CCC)	0.00038	0.00026	1.46	0.144

F(1, 681)	2.14
(p-value)	(0.1438)
R-Squared	0.0031
R-Squared Adj.	0.0017
Root MSE	16.983

Source: Researcher's Computation

The analysis conducted using Ordinary Least Squares (OLS) on the panel dataset reveals a statistically significant positive relationship between the Cash CCC and ROA. Nevertheless, the Consumer Confidence Index (CCI) exhibits an insignificantly minimal influence on the financial performance of publicly traded companies in Nigeria, as indicated by a t-statistic of 1.46. The coefficient of concordance correlation (CCC) is calculated to be 0.00026, suggesting that the standard errors for the explanatory variables are small.

#### 4.5 Test of Hypothesis II (ROA and ARM)

H<sub>02</sub>: Accounts receivable management does not influence financial performance of quoted firms in Nigeria

**Table 6: Results of Model II**

Dependent Variable: Financial Performance (ROA) No. of Obs. = 683					
Variables	Symbol	Coefficient	Std. Err	t-Statistics	Sign.
Constant	CONS	1.56335	0.60853	2.57	0.010
Account Receivable Management	ARM	15.18306	1.52106	9.98	0.000
F(1, 681)				99.64	
(p-value)				(0.0000)	
R-Squared				0.1276	
R-Squared Adj.				0.1264	
Root MSE				15.887	

Source: Researcher's Computation

The research conducted using Ordinary Least Squares (OLS) on the panel dataset indicates a statistically significant positive relationship between Account Receivable Management (ARM) and Return on Assets (ROA). The use of ARM management in listed firms in Nigeria a statistically significant positive effect on their financial performance. The OLS analysis revealed that the standard error for ARM was estimated to be 1.5, suggesting a high degree of precision with an approximate accuracy rate of 98.5%. We also observed the p-value obtained which is (0.0000) is lesser than 0.05 at 5% level of significance, implying that the null hypothesis is rejected. The R-squared obtained is 0.1276 and the Adj R-squared obtained is 0.1264, The findings indicate that the Average Receivable Management (ARM) accounts for around 12.64% to 12.76% of the observed fluctuations in the financial performance of publicly traded companies in Nigeria. This finding indicates a statistically significant relationship between (ARM) and (ROA) of publicly traded companies in Nigeria.

#### 4.6 Test of Hypothesis III (ROA and APM)

H<sub>03</sub>: Account payable management has not significantly affected financial performance of quoted firms in Nigeria

**Table 7: Results of Model III**

Dependent Variable: Financial Performance (ROA) No. of Obs. = 683

Variables	Symbol	Coefficient	Std. Err	t-Statistics	Sign.
Constant	CONS	-2.92725	0.82447	-3.55	0.000
Account Payable Management	APM	0.17378	0.01993	8.72	0.000
F(1, 681)				76.03	
(p-value)				(0.0000)	
R-Squared				0.1004	
R-Squared Adj.				0.0991	
Root MSE				16.133	

*Source: Researcher's Computation*

The panel dataset was subjected to an Ordinary Least Square (OLS) analysis, which indicated a positive correlation between the independent variable APM and the dependent variable ROA. The variable of account payable management (APM) produced a t-statistic of 8.72, accompanied by a p-value of 0.000. These results provide evidence in favour of the proposition that proficient management of accounts payable has a statistically significant positive influence on the financial performance of companies listed in Nigeria. The accuracy level of the third hypothesis test was about 99.8%, as indicated by a p-value of 0.0000 and an R-squared value of 0.1004 with an Adjusted R-squared value of 0.0991. The findings of this study indicate that the variable of APM accounts for roughly 9.91% - 10.04% of the observed fluctuations in the financial performance of publicly traded companies in Nigeria. The calculated p-value (0.0000) is lower than the specified significance level of 0.05, suggesting a statistically significant relationship between APM and the financial success of listed companies in Nigeria. Hence, the null hypothesis, which asserts that there is no significant impact of accounts payable management (APM) on financial performance, is rejected. These results agree with that Adekola, et al, (2017), Umenzekwe, et al, (2021), Ibrahim, et al, (2021), Sani, et al, (2023) as the outcome suggests that the management of accounts payable has a significant role in influencing the financial performance of publicly traded companies in Nigeria.

#### 4.4 Discussion of Findings

The findings indicate that there is a substantial relationship between the rate at which management converts current assets into cash and the financial performance of the organization, as assessed by return on assets. The research additionally revealed that the handling of accounts receivable significantly influences the financial performance of Nigerian firms that are listed on the NigeriaExchange Group. Nevertheless, it is worth noting that the management of accounts receivable might not exert a substantial influence on the financial success of the organization if firms do not access and review their mode of operation in line with the firm's goal and objectives particularly with regards to the return on assets metric. The research also discovered a significant influence of account payable management on the financial performance of listed Nigerian firms.

### 5.0 Conclusion and Recommendation

#### 5.1 Conclusion

This research employed inferential and descriptive statistical methods to analyze the influence of working capital management (WCM) on the financial performance of publicly listed Nigerian firms. The research revealed a significant relationship between working capital management (WCM) and the financial performance of publicly traded companies in Nigeria. Nevertheless, it can be observed that the CCC did not exert a substantial influence on the financial performance of these companies like

ARM and APM, subsequently emphasizing the significance of implementing efficient working capital management (WCM) practices in order to ultimately improve firms' financial performance.

### **5.3 Recommendations**

Based on our findings, it is recommended that;

1. organizations should maintain optimal working capital to maximize its value, with cash-flow management being crucial.
2. A prudent strategy should be adopted, prioritizing capital allocation into liquid assets to mitigate risk of inadequate funds.
3. Nigerian organizations should adopt effective WCM practices in accounts receivable, accounts payable, and inventory, as efficient management is expected to positively impact their market value. This approach is crucial for businesses to ensure adequate funds for daily operations and to remain viable in its operation.

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