

WORKING CAPITAL MANAGEMENT AND FIRM PERFORMANCE OF MANUFACTURING FIRMS LISTED ON THE NIGERIAN STOCK EXCHANGE

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ABSTRACT

This study examines the relationship between working capital management and firm performance. Accounting information from a major salt manufacturing company in Nigeria was collected from the organisation's annual reports and accounts from 2012 to 2016. Results of the analyses of the data collected showed that neither average collection period, nor average payment period has a significant effect on the performance of a firm when measured with return on assets (ROA). However, inventory collection period and cash conversion period have negative, but significant effect on return on investment. The implication is that a firm can improve performance by reducing its inventory conversion period and cash conversion period.

Keywords: Inventory Conversion Period, Average Payment Period, Average Collection Period, Cash Conversion Period and Return on Asset.

INTRODUCTION

The efficiency and effectiveness of top level management depends on its aptness to control current assets and current liabilities to enable organisation have highest return on asset and at same the time reduce payments of its liabilities. Optimal management of working capital positively accounts for the creation of firm value for an organisation. A firm is to maintain good liquidity and profitability balance while carrying out its daily activities (Padachi, 2006), and this cannot be achieved without good management of working capital.

In developing economies, ensuring that businesses are sustained is usually a top priority, this partly explains why the issue of managing working capital attracts so much attention to scholars and practitioners. Indeed, in Nigeria, for instance, there is a large and growing literature on working capital management. Some of these studies focus on banking industry and others on non-financial organisations. While a number of studies examine working capital in manufacturing companies few of them actually focus on the food industry but do consider some working capital measures such as inventory conversion period (Aregbeyen, 2011; Imeokparia, 2015). This study examines working capital management and firm performance in salt manufacturing company, using a wide range of variables for working capital and organisational performance.

LITERATURE REVIEW

Importance of working capital

Management of working capital accounts for a significant portion of firm financial management, it refers to investment on current asset and current liabilities which are used up within one year or less and this is important for firm’s daily business operation.

Managing Working Capital is very important because current asset of non-financial organisations accounts for more than half of their total asset. They account for even more in distribution companies. Surplus level of current asset can cause an organisation not to achieve a standard return on investment, while firms with little current assets may run into difficulty in maintaining smooth operations.

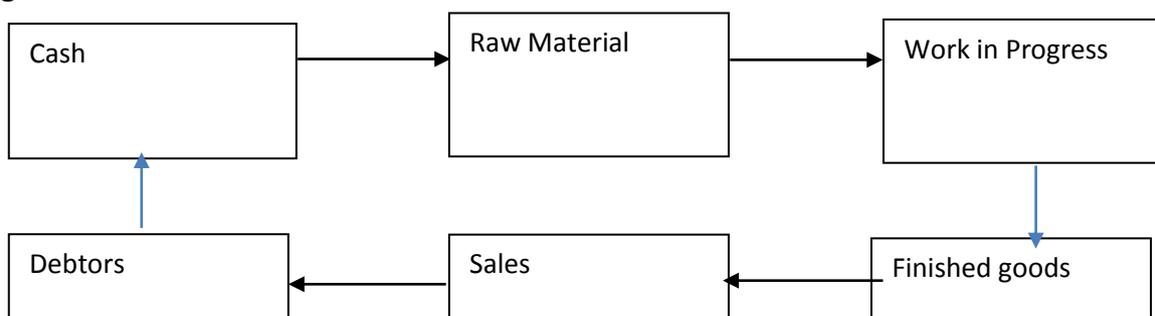
The various aspect of working capital management involves determining the optimal level at which the controllable ones can be maintained at a particular time. Eljelly (2004) asserts that managing working capital involves planning and controlling current asset and current liability in such a manner that eliminate the risk of not meeting current obligations on one hand and avoid over investment on the other hand. The profitability of a firm is affected by its working capital management. In another study Joshi, 1995 stated that management of working Capital is very crucial in financial management.

Working capital is a crucial function of corporate management. Every firm be it profit or not for profit needs working capital, working capital is important for sustaining solvency, profitability, liquidity and survival of the organisation. Shin and Soenen (1998) went further to state that management of working capital can impact on the liquidity and profitability of an organisation. Maintaining organisational liquidity is as important as profit maximization, it is worthy of note that increasing profit at the expense of liquidity can be dangerous to the organisation. Management of working capital is a straight forward concept, it is the ability of the organisation to find the difference between current asset and current liabilities (Harris 2005). Also asserted by Smith (1980) is the reality that working capital management is essential to organisation because of its effects on a firms’ profitability, risk and its value.

Working capital management has two major concepts: Net working capital concept and Gross working capital concept. The net working capital is the sum when short term liabilities are removed from the current assets while the gross working capital is the firms’ total investment in current assets

The concept of operating cycle is very important in working capital management. The operating cycle as stated by Pandey (1979) is the time required to complete the following sequential events in a typical manufacturing firm.

Figure 1



Cash Operating Cycle

Empirical Review

Previous studies have analysed the link between working capital management and firms' performance in different markets some used proxies for working capital and others used real values and there are different results.

Oladipo and Okafor (2013) studied the connection of a firms' working capital management practice and dividend pay-out ratio on its profitability. Five years data were analysed from 12 manufacturing companies who file their account with the Nigerian Stock exchange from 2002 – 2006. The statistical tools used for the study were OLS regression and Person Product Moment Correlation Technique. The result of the study showed that leverage showed negative significance on corporate profitability while shorter debt ratio and net trade cycle enhances high corporate profitability.

Akoto, Awunyo-Victor and Angmor (2013) studied the practices of managing working capital and profitability of manufacturing firms listed on the Ghana Stock Exchange Data from annual financial statement of 13 listed manufacturing firms on the Ghanaian stock exchange was used for the study for a period covering 2005 – 2009. Panel data regression analysis and panel data were used. The result indicated a significant negative relationship between accounts receivable days and profitability.

In another related study Almazari (2013) studied the nexus between managing working capital and profitability of a firm for the Saudi Cement Manufacturing Companies. The study included 8 cement industries listed in the Saudi Stock Exchange from 2008 – 2012 the study used Pearson Bivariate Correlation and regression analysis. The result of the findings showed that the industry's current ratio affected profitability because it was the most important measure for liquidity.

Nyabwanga, Ojera, Lumumba Odondo and Otieno (2012) using 113 sample of 41 manufacturing and 72 trading firms, they studied how the practice of managing working capital affects financial performance of SSE's in Kisii South District using pearson correlation coefficient and multiple regression analysis techniques. The result of the study showed that WCM practices were low amongst SSE's as many had not adopted working capital management routines.

Uremadu, Egbiide and Enyi (2012) conducted a study on the impact of working capital management and liquidity on corporate profits. The study used descriptive statistics and OLS methodology for the data analysis using a cross sectional time series for a period of 2005-2006. The findings of the study showed a positive effect of inventory conversion period, debtors collection period, creditors payment period on corporate profitability measured by return on assets.

In a study carried out by Bhunia and Das, 2012 they examine connection between profitability and management of working capital of Indian private sector firm. Current ratio, cash position ratio, liquid ratio, debt equity ratio, interest coverage ratio, inventory turnover ratio, debtors' turnover ratio, working capital cycle and creditors' turnover ratio, were used as independent variables in the study, the proxy for Profitability was Return on Capital. The study used multiple regression analysis, the finding of the study shows a weak connection between working capital management and profitability.

Sharma and Kumar (2011) in a study on managing working capital and profitability of a firm in Indian using 263 non-financial firms listed on the Bombay Stock Exchange from 2002 – 2008. Multiple regression was used in the analysis. The finding of the study shows a positive connection between working capital management and firm profitability, they found

that accounts receivable are positively related to ROA and accounts payable are negatively related to ROA.

Nwakwo and Osho (2010) investigated the efficient working capital management as a pre-requisite to organisational growth and survival. Desk research method was used, the findings show that the risk of changes in technology or demand allow for surplus unsalable stock and the danger of inability to meet its obligation when due.

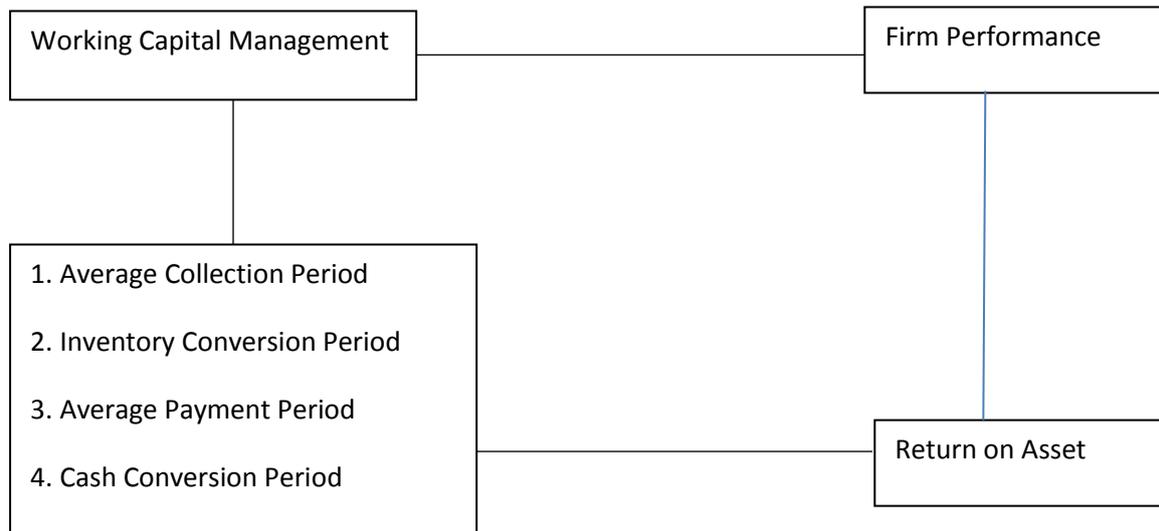
Mathuva (2010). Studied working capital management effect on organisational profitability, the result showed a significant negative connection between the time it takes a firm to collect cash from debtors and profitability. The findings of the study showed high significant positive relationship between firm profitability and inventory conversion period.

Gill, Biger and Mathur (2010) studied the nexus between managing working capital and profitability of 88 quoted American firms on the New York Stock Exchange. The study period was between 2005-2007, using Regression techniques and Pearson Bivariate Correlation Analysis. The findings of the study shows a statistical evidence in the connection between the cash conversion cycle and profitability, measured by gross operating profit. It means that managers can make profit for their firms by correctly handling and keeping optimal level of cash conversion cycle of accounts receivables.

Padachi, (2006) studied the movement in working capital management and how it affects firm performance. The study used ROA as measures for profitability while inventory days, cash conversion cycle and accounts receivables days were used as proxy for working capital management. 58 Mauritius small manufacturing firms were used as sample. Panel data analysis was used for the study, the study period was for 6 years (1998-2003). The study showed an association between high investment in inventory and low profitability.

Figure 2

Conceptual Framework



Objectives of the Study

1. To examine the relationship between average collection period (ACP) and performance of firm measured by return on asset.
2. To examine the relationship between inventory conversion period (ICP) and return on asset

3. To examine the relationship between average payment period and return on asset
4. To examine the relationship between cash conversion period and return on asset

Research Hypotheses

- H01: There is no significant relationship between average collection period (ACP) and performance of firm measured by return on asset.
- H02: There is no signature relationship between inventory conversion period (ICP) and return on asset
- H03: There is no significant relationship between average payment period and return on asset
- H04: There is no significant relationship between cash conversion period and return on asset

Research Methodology

This paper examines the effect of working capital management on firm performance of manufacturing firms listed in the Nigerian Stock Exchange (NSE). This study focuses on Dangote Manufacturing Company. The secondary data used for this study is obtained from the annual report and accounts of the company.

Model Specification

The model adopted for this study is based on previous study. These model is in line with the model of Uremadu, Egbide and Enyi (2012). The firms' performance is modelled using four working capital management measures and current ratio (firm characteristics). The working capital management on firm performance are modelled as follows:

$$\text{Model 1: } ROA_{it} = \beta_0 + \beta_1 ACP + e_{it}$$

$$\text{Model 2: } ROA_{it} = \beta_0 + \beta_2 ICP + e_{it}$$

$$\text{Model 3: } ROA_{it} = \beta_0 + \beta_3 APP + e_{it}$$

$$\text{Model 4: } ROA_{it} = \beta_0 + \beta_4 CCP + e_{it}$$

Model 1 regresses Return on Asset (ROA) on the Average Collection Period (ACP) Model 2 regresses return on assets (ROA) on inventory conversion period (ICP); Model 3 regresses return on assets on Average Payment Period (APP); while Model 4 regresses ROA on Cash Conversion Period (CCP).

Data and Variables:

Data used for this study was extracted from published annual report and accounts of the company from 2012 – 2016.

To analyse the effect of working capital and firm performance of manufacturing firms in Nigeria, performance of the firm was measured by Return on Asset (ROA), ROA is the net profit divide by total assets. Return on Asset is a measure for the dependent variables Nazir and Afza (2009) and several others used these variables. It determines the efficiency of management in the use of assets in generating earnings.

Table 1: Abbreviation and Variable Measurement

Abbreviation	Variable	Measurement
ROA	Return on Asset	Net Profit /Total Asset
ACP	Average Collection Period	Accounts Receivable/(Sales / 365)

ICP	Inventory Conversion Period	Inventory / (Cost of Sales / 365)
APP	Average Payment Period	Accounts Payable / (Purchase / 365)
CCP	Cash Conversion Period	ACP + ICP – APP
CR	Current Ratio	Current Asset / Current Liabilities

Results

Table 2 presents the bivariate correlation of the variables used in this study. Return on assets (ROA) is negatively correlated with average collection period (ACP) and with average payment period (APP). ROA is also negatively but significantly correlated with inventory conversion period (ICP) and cash conversion period (CCP).

Table 3 presents the model summary of the regression analyses. For Model 1 which relates ACP to ROA, the adjusted R² is 29 per cent but the model is not significant. Model 2 relates ICP to ROA. The adjusted R² for model 2 is 85 per cent, and the model is significant. Model 3 examines the effect of APP on ROA. The adjusted R² of the model is 66 per cent, but the model is not significant. Model 4 relates CCP to ROA. The adjusted R² of the model is 98 per cent, and the model is significant.

Table 4 presents the coefficients on the independent variables. The results show that average collection period (ACP) and average payment period (APP) are insignificant. While inventory conversion period (ICP) and cash conversion period (CCP) are negatively significant.

Table 2 Bivariate Correlations (Pearson Correlation)

		ROA	ACP	ICP	APP	CCP
ROA	Pearson Corr	1	-0.686	-.925*	-0.812	-.993**
	Sig. (2-tailed)		0.201	0.024	0.095	0.001
ACP	Pearson Corr	-0.686	1	0.582	.978**	0.671
	Sig. (2-tailed)	0.201		0.303	0.004	0.215
ICP	Pearson Corr	-.925*	0.582	1	0.739	.914*
	Sig. (2-tailed)	0.024	0.303		0.154	0.03
APP	Pearson Corr	-0.812	.978**	0.739	1	0.798
	Sig. (2-tailed)	0.095	0.004	0.154		0.106
CCP	Pearson Corr	-.993**	0.671	.914*	0.798	1
	Sig. (2-tailed)	0.001	0.215	0.03	0.106	
	N	5	5	5	5	5

*Correlation is significant at the 0.05 level; ** Correlation is significant at the 0.01 level

Table 3 Model Summary

	Independent Variable	R	R ²	Adjusted R ²	F	Sig.	Durbin-Watson
Model 1	ACP	.686a	0.47	0.293	2.661	.201b	1.235
Model 2	ICP	.925a	0.855	0.807	17.721	.024b	2.465
Model 3	APP	.812a	0.659	0.546	5.806	.095b	1.348
Model 4	CCP	.993a	0.987	0.982	221.214	.001b	2.816

Dependent variable ROA

Table 4 Coefficients

	Independent Variable	B	Std Err	Beta	t	sign
Model 1	ACP	-0.065	0.04	-0.686	-1.631	0.201
Model 2	ICP	-0.388	0.092	-0.925	-4.21	0.024
Model 3	APP	-0.036	0.015	-0.812	-2.409	0.095
Model 4	CCP	-0.028	0.002	-0.993	-14.873	0.001

Dependent variable ROA

CONCLUSION

The results show that neither average collection period, nor average payment period has a significant effect on the performance of a firm when measured with return on assets (ROA). On the other hand, inventory collection period and cash conversion period have negative, but significant effect on return on investment. It therefore means that the lesser the inventory conversion period and cash conversion period of a firm, the higher the performance.

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