Working Capital Management Efficiency And Firm's Profitability

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ABSTRACT

This study investigated the effect of working capital on the performance of consumer goods companies. The objectives of this study were to analyze the firm's profitability in working capital management in manufacturing companies in Nigeria and to determine the significant correlation among current ratio, acid test ratio and cash ratio. The study employed ex post-facto research design. Five consumer goods firms were chosen through a purposive sampling technique and data were extracted from annual reports of these firms from year 2012 to 2016. A panel data regression was used to analyse the data. Working capital was proxied with current ratio (CR), acid test ratio (ATR) and cash ratio (CAR) while performance was proxied with return on asset (ROA). Findings revealed that CR, ATR and CAR were correlated with ROA although it was insignificant. The study concludes that the available working capital needed to carry out day to day activities in these organisations is not adequate and effectively managed to increase profitability. It is on this note that the researcher recommends that all stakeholders should be proactive in ensuring that the firm's policy is supportive to the maximum utilization of working capital in order to increase profitability; organisationsare to put in place working capital management policies, plans and reviewed regularly, in order to increase their profitability in a competitive business environment; employ the services of experts in the field of financial management and accounting to examine their working capital and define the factors that are affecting their working capital for appropriate measures and solutions.

Keyword: Working capital efficiency, profitability, Consumer goodshain, Integration, Performance, Manufacturing Firms, Lagos, Nigeria

INTRODUCTION

"The current issues on cash and credit are threatening the survival of many businesses all over the world generally and Nigeria in particular. The aftermath of this credit crunch is drastic reduction in production and sales leading to massive retrenchment of workers and liquidation of many organizations" (Owolabi & Alayemi, 2010). Shareholders of firms will willingly invest their funds if the financial performance of the firm is encouraging and in the long run increase the market value of the firm and shareholders wealth. A sustainable business relies on the efficient use of financial capital to ensure smooth running of the business operations thereby reducing the chance of bankruptcy.

Ahmadabadi, Mehrabi, and Yazdi (2013) opined that financial affairs could be classified as capital budgeting, capital structure and working capital management. Capital budgeting and capital structure are related to long term capital management, while working capital management is related to short term capital management. Though these concepts are related to capital, working capital management is a tasking activity because they are done on a daily basis. Empirical results confirmed that ineffective management of working capital is a major factor for industrial sickness and that efficient management of working capital is an important indicator of sound health which requires reducing of unnecessary blocking of capital in order to bring down the cost of financing (Arshad & Gondal, 2013).

Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the relationship that exist between them (Owolabi & Alayemi, 2010). Most financial managers have challenges balancing the use of current assets and current liabilities which constitute working capital. These have initiated a lot of research in this area and several findings on how working capital management affects performance of firms.

This paper is therefore written to examine the relationship between working capital management and performance of consumer goods firms.

Statement of the problem

Companies thrive where optimum short term finances (working capital) are available to carry out the day to day activities. This enhances profitability, ensures that demands of all stakeholders are met and leads to sustainable growth. However, it is appalling when financial problems creep into the organization as a result of inadequate funds which could lead to inability to meet matured short term obligations,

disrupt organisational operations, reduce sales and result to dwindling profits. Also, problem of excessive working capital leads to underutilization of capital which attracts a holding cost.

Objectives of the study

The objectives of this study are as follows:

To analyse the firm's profitability in working capital management in manufacturing companies in Nigeria.

To determine the significant correlation among current ratio, acid test ratio and cash ratio

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Working Capital Management, Working Capital and its Components

Working capital management (WCM) is the efficient management working capitalcomponents which includes current assets and current liabilities. Akindele and Odusina (2015) state that WCM is set to ensure that current assets which comprise of inventories, receivables, cash, bank, short term investments and prepaid expenses as well as the current liabilities which comprise of payables, provision for tax, other provisions against liabilities payable within a period of a year are well managed. Eljelly (2004) sees it as the planning and controlling of current assets and current liabilities in a manner that eliminates the risk of inability to meet matured short term obligations and avoid excessive investments. The purpose of working capital management is to ensure smooth continuity of operations of the firm and adequate availability of cash flow to satisfy maturing short term debt and forthcoming operational expenses (Ahmad, Malik, Nadeem, & Hamad, 2014)

Management of cashreduces the holding cost of cash and ensures that cash balances are sufficient to carry out day to day activities. With the management of inventory, there is always the reduction of re-ordering cost, work in progress and production lead time. There is also minimal waste of raw materials. As a result of debtors' management, credit policies are put in place to ensure debtors pay at the due date.

Working Capital (WC) can be expressed in the gross and net form (Akindele & Odusina, 2015; Onaolapo & Kajola, 2015; Arshad & Gondal, 2013). The gross form is basically the current assets while the net form is excess of current assets over current liabilities. Longe and Kazeem (2008) and Asaolu (2005) argued that WC is simply the difference between current assets and current liabilities. Ahmad et al (2014) emphasized that the level of WC determines the ability of firms to meet its day to day activities. They further contributed that a positive

WC exist if current assets exceeds current liabilities and vice versa for a negative WC. With a positive WC, a firm can settle its short term liabilities as at when due while a negative WC can lead to bankruptcy of the firm. Therefore, an optimal level of working capital must be the target of any financial manager to ensure efficiency, profitabilityand survival of the firm. Wuryani (2015) ascertained that excessive working capital indicates that the funds are not productive and Onaolapo and Kajola (2015) supported the view that excessive WC will tie down capital and hinder the generation of more income while inadequate WC will disrupt production process, cause the inability of the firms to meet up with short term obligations and lead to collapse of the firm.

Components of WC are current assets (inventory, accounts receivable and cash) and current liabilities (accounts payables, bills payable etc.) (Owolabi & Alayemi, 2010; Iqbal & Zhuquan, 2015). According to Longe and Kazeem (2008) current assets are assets that last for a short period of time. Current liabilities are short term liabilities or debts a firm owes. Owolabi and Alayemi (2010) expressed current assets as "assets that can be converted into cash within one year without undergoing diminution in value and without disrupting the operations of the firms" and current liabilities as "liabilities which are intended, at their inception, to be paid in the ordinary of business out of current assets or earnings of the concern within a year".

The language which is used by accountants to determine the financial health of a company in relation to other companies is financial ratios. With financial ratios, it is possible to ascertain the profitability, liquidity, operating efficiency and growth of companies. Examples of such financial ratios are Current Ratio (CR), Acid Test Ratio (ATR), Cash Ratio (CAR) and Return on Assets (ROA). The income statement and the balance sheet provides the data used in measuring these ratios.

The liquidity and the efficiency of a firm operating cycle could be measured by the current ratio. Current ratio measures companies' ability to payback its short term debt with its current assets (Hossan & Habib, 2010). The ratio compares all current assets (liquid and illiquid) with the current liabilities of the company in order to determine the likelihood of the company meeting its short term debts. Higher current ratio signifies that a company has sufficient ability to meet its short term debts i.e. the firm has current assets than current liabilities while lower ratios signifies that the firm's current liabilities are more than its current assets and his indicates a liquidity problem. Acid test ratio, also referred to as quick ratio, is another measure of

firms' ability to meet its short term debts. It is a conservative version of current ratio. It compares current assets, excluding stock, with current liabilities. This is so because stocks may not be easily converted into cash. This makes it a ratio between liquid assets and current liabilities. Cash ratio on the other hand measures only marketable securities, cash and cash equivalents thereby eliminating inventories and accounts receivables and afterwards compared with the current liabilities of the firm.

Empirical Review

Azam and Haider (2011) examined the impact of working capital management on firms' performances using panel data for the study from 21 KSE 30 index listed firms from 2001 to 2010. Canonical correlation method of analysis was adopted and results revealed that WCM has significant impact on firms' performance. They concluded that managers can increase value of shareholders and ROA by reducing their inventory size, Cash Conversion Cycle (CCC) and net trading cycle.

Onodje (2014) used regression methods (fixed, random effect and one step difference GMM) on data covering 75 firms quoted on the NSE from 2002 to 2011 to determine the relationship between working capital management and performance. Findings showed that WCM is related to performance. Variables conversion period are directly or positively related to performance while payable deferred period, cash conversion cycle (CCC) and debt equity ratio (DER) are inversely or negatively related to performance. Quick ratio (QR) which was a proxy for liquidity has no significant relationship with manufacturing performance.

Nyabuti and Alala (2014) carried out a research on the effect of efficient aggressive investment policy on ROA of the firms. 10 companies from the different economic sector such as agricultural sector, commercial and services, financial and investments, industrial and allied sector listed on the Nairobi Stock Exchange were sampled for periods 2008 to 2012 and it was revealed that a relationship exist between WCM policy and financial performance.

Marobhe (2015) utilized CCC and ATR as measures of WC and ROA, firm size, firm growth, asset utilization, operating cash flow, gearing and real GDP growth rate as the determinants of WC. His findings showed that ROA, firm size and firm growth and asset utilization have a significant relationship with CCC using the random effect model. For ATR, firm size, firm growth, gearing and operating cashflow showed significant relationship

using the fixed effect model. Arsad and Gondal (2013) research employed quantitative method to test hypothesis and it was found that there is a significant negative relationship between WCM and profitability of firms.

Ahmad et al (2014) investigated the impact of WC on corporate performance using data obtained from annual reports from 2007 to 2011. Regression models were employed and findings revealed that average collection period and operating cycle are positive while average age of inventory is negatively related to ROE. Average payment is negatively related whereas CCC is positive and significant. It was thus concluded that WCM influences firms' profitability.
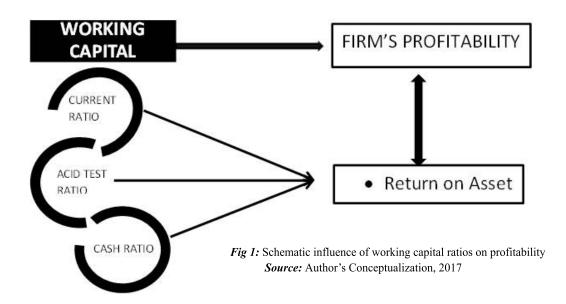
RESEARCH METHODOLOGY

The study was quantitative in nature. The population for this study includes consumer goods companies listed (Cadbury, Honeywell, UAC, Flour Mills and Nestle Nigeria plc) on the Nigerian Stock Exchange. Judgmental sampling technique was adopted in selecting five consumer goods companies listed on the Nigerian Stock Exchange market.

The data used for this study were secondary data derived from the audited annual financial statements of the selected consumer goods companies listed in the Nigerian Stock Exchange (NSE). The period considered for this study is from year 2012 to 2016 (5 years). The study involves time series and cross sectional data. Panel data regression analytical technique was used to observe all variables for the period.

The study employed Return on Asset (ROA) as the dependent variable. This was chosen because it is an important accounting–based and widely accepted measure of financial performance. It can also be viewed as a measure of management's efficiency in utilizing all the assets under its control, regardless of the source of financing. The independent variable used in this study was working capital management for which three indexes are used, viz, by Current Ratio (CR), Acid Test Ratio (ATR) and Cash Ratio (CAR).

Fig 1: Schematic influence of working capital ratios on profitability
Source: Author's Conceptualization, 2017

Model specification

This study employed the model below:

$ROA_t = \beta_o + \beta_1 CR_t + \beta_2 ATR_t + \beta_3 CAR_t + e_t$

Where

ROA_t = Return on Asset

CR_t = Current Ratio (CR)

ATR_t = Acid Test Ratio (ATR)

CAR_t = Cash Ratio (CAR)

e_t, the error term which account for other possible factors that could influence ROA_{it} that are

not captured in the model.

apriori expectation

The apriori expectation is such that: $\beta_1 CR_t + \beta_2 ATR_t + \beta_3 CAR_t + e_t > 0$.

The implication of this is that a positive relationship is expected between explanatory variables ($\beta_1 CR_t + \beta_2 ATR_t + \beta_3 CAR_t$) and the dependent variable (ROA). The coefficient of correlation will determine various levels of relationship between the explanatory variables.

Data analysis

Regression and correlation analysis were used to analyze the significant relationship and association between the working capital management efficiency and firm's profitability respectively.

Table 1 shows the regression analyses of the five selected manufacturing companies in Nigeria.

	Variables	R	R^2	P	Model	β	Remarks
					(Constant)	-.323	
				.177	Current ratio	-.199	Not sig.
Cadbury	Working Capital	.990	.980		Acid test ratio	.970	
					Cash ratio	-.628	
				.465	(Constant)	.095	
					Current ratio	.001	Not sig
Nestle	Working Capital	.927	.860		Acid test ratio	.334	
					Cash ratio	-.409	
				.526	(Constant)	-.430	
					Current ratio	.002	Not sig
UAC	Working Capital	.904	.818		Acid test ratio	.145	
					Cash ratio	.469	
				.132	(Constant)	-.083	
					Current ratio	.229	Not sig
Honeywell	Working Capital	.995	.989		Acid test ratio	-.001	
					Cash ratio	-.203	
				.051	(Constant)	.400	
					Current ratio	.002	Not Sig.
Flourmills	Working Capital	.999	.998		Acid test ratio	-.605	
					Cash ratio	.790	

Dependent variable: ROA

This table provides the *R, R2, P, β,* and *Sig.* values. The R value represents the simple correlation (the *"R"* Column = .990, .927, .904, .995, .999), which indicates the strength of relationship between the dependent and independent variables. The result shows that as the working capital of Cadbury, Nestle, UAC, Honeywell, and Flourmills increases, the profitability of the company also has tendency to increase by 99.0%, 92.7%, 90.4%, 99.5%, 99.9% respectively.

The R^2 value (the **"R Square"** column = .980, 860, .818, .989, .998) indicates how much of the total variation in the dependent variable (Return on Asset) can be better explained by the independent variables (working capital). For Cadbury Nigeria Plc. the firm's profitability can be better explained by 98.0% of the working capital. For Nestle Nig. Plc. the firm's profitability can be explained with 86.0% of the working capital. For UAC Nig. Plc. the firm's profitability can be better explained by 81.8% of the working capital. For Honeywell, the firm's profitability can be better explained by 98.9% of the working capital and for Flour Mills, the firm's profitability can be better explained by 99.8% of the working capital.

The *"P"* column indicates the statistical significance of the overall regression model that was run on each company. Here, p = .177, .465, .526, .132, .051 which is greater than 0.05, and indicates that, overall, the regression model does not statistically significantly predicts the outcome variable (i.e., it is not a good fit for the data).

The β **column** provides us with the necessary information on how each working capital proxies (Current ratio, Acid test ratio, Cash ratio) independently contributed statistically significantly to the model.

Applying the multiple regression model: $ROA_t = \beta_o + \beta_1 CR_t + \beta_2 ATR_t + \beta_3 CAR_t + et$, the result from the model column is used to compute the predicted scores

ROA_t **cadbury** $= (-.323) + (-.199cr) + (.970atr) + (-.628car)$

ROA_t **nestle** $= (-.095) + (-.001cr) + (.334atr) + (-.409car)$

ROA_t **uac** $= (-.430) + (-.002cr) + (.145atr) + (.469car)$

$ROAt$ **honeywell** $= (-.083) + (-.229cr) + (-.001atr) + (-.203car)$

ROA_t **flourmills** $= (.400) + (.002cr) + (-.605atr) + (.790car)$

*Notice that all three predictors are in the model. The predicted scores indicate that three companies (Cadbury, Nestle, Honeywell) did not meet the apriori expectation such that $\beta_1 CR_t + \beta_2 ATR_t + \beta_3 CAR_t + e_t < 0$ while two companies UAC and Flourmills met the apriori expectation such that $\beta_1 CR_t + \beta_2 ATR_t + \beta_3 CAR_t + e_t > 0$.

Conclusion
Based on the findings of this research work, it could be deduced from the regression analyses that there is a positive significant correlation between the ROA and current ratio of Nestle, UAC and Flourmills Nigeria Plc. Also, only the ROA and Acid Test Ratio of Honeywell Plc were found to be negatively correlated and significant. ROA had no significant relationship with the current ratio, acid test ratio and cash ratio in the case of Cadbury. Conversely, a relationship can be weak but significant. The key factor is the size of the sample. It is easy to produce a strong correlation by chance but one must pay attention to its significance to keep from jumping to conclusion Overall, it can be concluded that working capital management does not have significant relationship with profitability of manufacturing firms in Nigeria. The findings of Rehman, Khan and Khokhar (2015) on liquidity – profitability relationship corroborates with this research work. Their result depicts an insignificant negative relationship between ROE, Quick Ratio (QR), Current Ratio (CR) and Cash Ratio (CAR). Though they also found a significant positive relationship between ROA and Current Ratio (CR), nevertheless, an insignificant relationship exists between ROA, QR and CAR. Likewise the study of

Adeleke and Mukolu (2013) is in tandem with this study findings. They found out that the relationship between working capital and performance is insignificant. In the same vein, this study findings also support the findings of Ahmadabadi et al (2013) who found a significant relationship between working capital and market value added but insignificant relationship between working capital management and refined economic value added using the regression analysis. However, Arshad and Gondal (2013) employed quantitative method to test hypothesis and found that there is a significant negative relationship between WCM and profitability of firms.

Recommendations
From the results, it is apparent that what is inherent in one company differs from what is inherent in another, i.e. looking at our observed ratios, some companies performed better in one or two ratios while others performed woefully using the same criteria. Therefore organisations are to employ the services of experts in the field of financial management and accounting to examine their working capital and define the factors that are affecting their working capital for appropriate measures and solutions. In addition, organisations' working capital management policies and plans should be put in place and reviewed regularly in order to increase companies' profitability in a competitive business environment. Organisations should also take appropriate measures in combining its investment i.e. portfolio management, while government should be responsible in creating an enabling business environment that will promote the growth of these organizations.

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APPENDIX

Regression Analysis

HONEYWELL

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.995[a]	.989	.957	.0100210	2.539

a. Predictors: (Constant), CARhwell, CRhwell, ATRhwell
b. Dependent Variable: ROAhwell

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.009	3	.003	30.354	.132[b]
	Residual	.000	1	.000		
	Total	.009	4			

a. Dependent Variable: ROAhwell
b. Predictors: (Constant), CARhwell, CRhwell, ATRhwell

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.083	.022		-3.812	.163
	CRhwell	.229	.044	.949	5.271	.119
	ATRhwell	-.001	.051	-.003	-.018	.989
	CARhwell	-.203	.046	-.518	-4.388	.143

UAC

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.904[a]	.818	.272	.0682940	1.834

a. Predictors: (Constant), CARuac, CRuac, ATRuac
b. Dependent Variable: ROAuac

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.021	3	.007	1.497	.526[b]
	Residual	.005	1	.005		
	Total	.026	4			

a. Dependent Variable: ROAuac
b. Predictors: (Constant), CARuac, CRuac, ATRuac

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.430	.582		-.739	.595
	CRuac	.002	.044	.021	.046	.970
	ATRuac	.145	.205	.632	.705	.609
	CARuac	.469	.298	1.387	1.572	.361

CADBURY

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.990[a]	.980	.922	.0219094	2.302

a. Predictors: (Constant), CARcadb, CRcadb, ATRcadb
b. Dependent Variable: ROAcadb

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.024	3	.008	16.754	.177[b]
	Residual	.000	1	.000		
	Total	.025	4			

a. Dependent Variable: ROAcadb
b. Predictors: (Constant), CARcadb, CRcadb, ATRcadb

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.323	.298		-1.084	.474
	CRcadb	-.199	.175	-.986	-1.135	.460
	ATRcadb	.970	.459	5.717	2.116	.281
	CARcadb	-.628	.505	-3.829	-1.244	.431

FLOURMILLS

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.999[a]	.998	.994	.0020983	3.112

a. Predictors: (Constant), CARflm, CRflm, ATRflm
b. Dependent Variable: ROAflm

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.003	3	.001	205.749	.051[b]
	Residual	.000	1	.000		
	Total	.003	4			

a. Dependent Variable: ROAflm
b. Predictors: (Constant), CARflm, CRflm, ATRflm

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.400	.046		8.731	.073
	CRflm	.002	.022	.013	.102	.935
	ATRflm	-.605	.041	-2.800	-14.590	.044
	CARflm	.790	.065	3.323	12.104	.052

NESTLE

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.927[a]	.860	.440	.0435115	2.801

a. Predictors: (Constant), CARnestle, CRnestle, ATRnestle
b. Dependent Variable: ROAnestle

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.012	3	.004	2.046	.465[b]
	Residual	.002	1	.002		
	Total	.014	4			

a. Dependent Variable: ROAnestle
b. Predictors: (Constant), CARnestle, CRnestle, ATRnestle

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.095	.109		.869	.545
	CRnestle	.001	.515	.003	.002	.999
	ATRnestle	.334	.786	.848	.425	.744
	CARnestle	-.409	.267	-1.085	-1.533	.368