

EFFECT OF CASH TO CASH CYCLE ON PROFITABILITY OF BASIC MATERIAL FIRMS IN NIGERIA

ORJINTA, HOPE IFEOMA & VEN. OKPALAUKEJE, R. U. C

DEPARTMENT OF ACCOUNTANCY, FACULTY OF MANAGEMENT SCIENCES, CHUKWUEMEK A ODUMEGWU OJUKWU UNIVERSITY ANAMBRA STATE, NIGERIA.

DEPARTMENT OF ACCOUNTANCY, FACULTY OF MANAGEMENT SCIENCES, CHUKWUEMEK A ODUMEGWU OJUKWU UNIVERSITY ANAMBRA STATE, NIGERIA.

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ABSTRACT

This study examined the effect of cash to cash cycle on profitability of basic material firms listed on the Nigerian Stock Exchange for the period of ten years spanning 2007 to 2016. The study employed ex-post facto research design and used secondary data collected from the annual report of selected firms for the analysis. Simple regression analysis (Pearson Correlation and Ordinary Least Square regression) were employed to analyze the collected data. The results revealed that cash cover ratio was found to have negative and insignificant effect on profitability proxy using return on asset while quick ratio was found to have a positive and significant influence on profitability of basic material firms at 5% level of significance having recorded a positive coefficient value of **0.1435** and **t-value of 2.5090**. However, we therefore recommend that management of basic material firms should reduce the magnitude at which they use up cash and its equivalent in settling their short term obligations in order to improve their profitability. Managers of basic material firms should as well reduce the time frame during which cash is tied down within the firms.

Keywords: Cash to cash cycle, cash cover ratio, quick ratio, current ratio and return on assets

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INTRODUCTION

Today, due to changing world's economy, advancement of technology and enlarged global competition among the companies, every company is striving to enhance their profitability and for this reason, companies are putting every effort to bring their cash to cash cycle at optimum level to maximize profitability. Generally liquid asset management is based on cash-to-cash cycle management and is considered as important factor enhancing the profitability of companies (Mussettola, 2014), since it shows how efficient a firm is in its payment of bills, collection of payments, and selling of inventory via cash cover ratio and quick ratio. The cash to cash cycle is a very powerful tool for assessing how well a firm's working capital is being managed. Cash to cash cycle is one of the most widely used measures to evaluate and measure the risks and returns associated with liquidity management since every corporate organization is extremely concerned about how to sustain and improve profitability, hence organizations monitor the factors affecting their performance in their immediate environment (Mamoud, Amir & Ali; 2015, Anser & Malik, 2013). Ibrahim and Abdullah (2016) viewed cash to cash cycle as a cycle that occurs when a firm purchases stock, sells the stock on credit as an account receivable, and then collects the account receivable via cash cover ratio and turns it into liquid asset (quick ratio and current ratio). The cash to cash cycle looks at the time taken in converting inventory

and receivables to cash, as well as the amount of time the company is given to pay its bills. Cash to cash cycle determines the number of days on which the company must commit additional resources beyond current commitments, to fund operating activities (Mutari 2015). The longer the interval, the greater investment in working capital is made (Mamoud, Amir & Ali; 2015).

However, if the costs of investing more in the working capital exceed the benefits from keeping more inventories or granting more trade credit, profitability of the organization may reduce by increasing the cash cycle (Panighrahi, 2013). That is why profit is considered as one of the important information in economic decisions. Identification of the optimal level of inventory, accounts receivable and payables (the components of cash to cash cycle) which reduces maintenance costs and opportunity costs and recalculating the cash to cash cycle under the optimum conditions can provide complete and accurate insights into the efficiency of the management of working capital, which ultimately minimizes the cash to cash cycle and maximizes profitability.

The prevalence of high interest rates during the last few years had discouraged basic material firms from raising debt capital. They needed to find creative ways to enhance their revenues, cut costs and position them for future growth. Thus, basic material firms primarily needed to rely heavily on internal cash flows for meeting their current debts and capital expansion. Prior studies like Ubesie and Duru (2016), Habeeb (2016), Mussettola (2014),

Zariyawati, Annuar, Taufiq, and Rahim (2009) investigated the effect of cash conversion cycle (CCC) on firm's profitability and found positive effect. Also Bala, Garba and Ibrahim (2016), Konuk and Zeren(2014) found both negative and positive effects (mixed results) of CCC on profitability. Studies like Zakari and Saidu (2016) , Duru and Okpe (2015), Mahmoud, Amir and Ali (2015), Ghaderi (2015), Mutari (2015), Enqvist, Graham, and Nikkinen (2014) Yasir, Majid and Yousaf (2014), Ukaegbu (2014), Takon (2013) and Tariq, Mumtaz, and Rehan (2013) found negative result between cash conversion cycle and performance.

It is therefore evident from the above findings that the extant literature has not found a clear cut direction of the relationship between the cash conversion cycle and the firm's performance and thus has created more need for further studies to substantiate the direction of the relationship between cash to cash cycle and firm performance.

Against this background, the following objectives were raised to guide this study.

- ✓ Determine the effect of cash to cash cycle on return on asset of basic material firms in Nigeria.
- ✓ Investigate the extent to which cash cover ratio enhances return on asset of basic material firms in Nigeria.
- ✓ Ascertain the degree to which quick ratio influences return on asset of basic material firms in Nigeria.
- ✓ Determine how current ratio improves return on asset of basic material firms in Nigeria.

- ✓ Assess the reaction of debt ratio on return on asset of basic material firms in Nigeria.

2.0: REVIEW OF RELATED LITERATURE

2.1: Conceptual framework

Cash to Cash Cycle and Firm Profitability

Warnes (2013) examined the impact of working capital management on the profitability over the period of five years from 2007-2011 and found that cash cycle management (CCM) also has positive and significant impact on return on asset (ROA) that means reduction in cash cycle management (CCM) will lead to increase in the profit of the firms. Takon (2013) investigate the impact of Cash Cycle management on Return on Assets (ROA) of selected Nigerian 46 quoted firms for the period, 2000-2009. Multiple regression technique was used in analyzing the models for testing the hypothesis. Based on the findings, Takon (2013) recommends that firms try to always reduce the number of days in cash conversion cycle in order to increase profitability as to create value for shareholders. Nahum and Neil (2010) examined the relationship between working capital management and profitability by taking the sample of 88 firms listed at New York stock for the period of three years from 2005 to 2007. Their study revealed significant effect between cash conversion cycle and profitability, estimated using gross operating profit.

Cash Cover Ratio and Firm Profitability

In a case study design done by Mutaju (2014) in East Africa where he assessed the relationship between working capital management and profitability of

manufacturing companies in the period of 2005-2012 using cash cover ratio as one of the independent variables. He found that cash cover ratio has significant negative relationship with return on asset.

Quick Ratio and Firm Profitability

Bala, Garba and Ibrahim (2016) observed through their regression results that quick ratio has positive, strong and significant impact on return on asset of listed food and beverage firms in Nigeria having recorded a positive coefficient value of 0.8491 which is significant at 1%. This could be as a result of the fact that, the stock which can be regarded as the weak form of liquidity than cash and other items that form the asset has been deducted from the calculation of quick ratio and as such its effect on performance was highly felt. Ailemen and Folashade (2014) examined working capital management and its effect on profitability of manufacturing sector in Nigeria using Nestle and Cadbury Nigeria Plc as sample for the period of 5years ranging from 2008 to 2012. Their study found that quick ratio was positively but insignificant related to profitability. Yahya and Bala (2015) documented that quick ratio being more liquid than current ratio, has more influence in improving the profitability firms. Mutaju (2014) found an insignificant relationship between quick ratios; cash cover ratio, current ratio and cash conversion cycle with return on asset.

2.2: Empirical Studies

Zakari and Saidu (2016) in their Nigerian study examined the impact of cash cycle management on firm profitability from 2010 to 2014. Using simple linear regression analysis on three main variables (inventory

turnover period, average collection period and average payment period). They found a significant positive relationship between cash conversion cycle and corporate profitability

Nida (2016) in a Pakistan study examined the influence of working capital management on firms profitability under different business cycles in 65 non-financial firms listed on Karachi Stock Exchange. By using the annual data for 10years from the period of 2004 to 2013, results show that the interaction terms of cash conversion cycle and accounts receivables show negative relationship with firms' profitability in different business cycles whereas the interaction term of inventory shows a significant positive relationship with firms profitability in the boom period. Moreover, the interaction term of accounts payable shows a significant positive relationship with firms' profitability in the recession period.

In a study of Hotel companies in Sri Lankan done by Habeeb Nijan (2016) for 3 years period, the relationship between Liquidity and profitability was examined using cash conversion cycle and its components such as accounts receivable outstanding days, account payable outstanding days and inventory outstanding days. Analyzing a sample of 26 randomly drawn companies listed in Colombo stock exchange over three years from 2011 to 2013, the study found that cash conversion cycle is positively and significantly related to the profitability. Accounts payable outstanding days (APOD) was found to be insignificantly related to profitability.

Bala, Garba and Ibrahim (2016) examined the effect of corporate liquidity on profitability of listed food and Beverages firms in Nigeria for the period of six years from 2009 to 2014. Using Robust Ordinary least Square regression, their results showed a strong positive relationship between quick ratio, accounts payable, IFRS, firm size and ROA while accounts receivable was found to be inversely significantly related to ROA. Generally, cash conversion cycle was inversely but statistically not significantly related to ROA.

Ubesie and Duru (2016) investigated the effect of cash conversion cycle management on the profitability of industrial and domestic products firms in Nigeria for the period of 12 years from 2000 to 2011. Their findings show that account receivable and account payable had significant positive effect on the industries profitability ratio at 1% level of significance while on the other hand, the industries inventory had significant but negative effect on the profitability ratio at 1% level of significance.

Duru and Okpe (2015) in their study empirically investigated the effect of cash conversion cycle management on the performance of Health Care manufacturing companies in Nigeria for the period of eleven years from 2000 to 2011. Generalized least square multiple regressions and ex-post factor research design were employed in order to analyze the effects and their results show that both cash conversion cycle and debt ratio had negative but significant effect on the profitability of the company while sales

growth rate had positive and significant effect on profitability.

In an Iranian study done by Mahmoud, Amir and Ali (2015), the relationship between CCC and profitability of companies listed in Tehran Stock exchange was examined for eleven years from 2002 to 2012. Using multivariate linear regression analysis, the results showed a significant inverse relationship between CCC and profitability in automotive and cement industries but a significant relationship was not observed between CCC and profitability of pharmaceutical industries.

By using panel data Ghaderi (2015) investigated the effect of cash change index on return on assets in 19 firms, enlisted in Tehran Stock Exchange during the time period from 2003 to 2009. Based on research results, the effects of cash change period on return on assets was negative while the GDP was positive and statistically meaningful. Due to the negative effect of cash change period of return on assets, they suggested that firms manager should reduce net time period between paying liabilities and receiving cash from accounts receivable because the shorter the period, there would be more desirable performance for the firm.

Muturi (2015) investigated the effect of cash conversion cycle on profitability of unlisted tea companies of Meru county in Kenya for a period of five years starting from 2009 to 2013, the study found out that CCC significantly and negatively affects the tea firms profitability.

Using data from an extensive sample of 4226 Italian manufacturing firms, Muscettola (2014) evaluates how cash conversion cycle affects the profitability of SMEs, results showed that average receivables' period is having significantly positive association with profitability indicating that lesser the cash conversion cycle, greater the profitability.

Warrad (2015) studied the impact of cash cycle management on the liquidity of Jordanian services firms that expressed by current ratio and quick ratio during the period from 2009 to 2012. The results showed that there is no significant impact of cash conversion cycle on Jordanian services firms' liquidity, also, there is no significant impact of cash conversion cycle on Jordanian services firms' current ratio, finally there is no significant impact of cash conversion cycle on Jordanian services firms' quick ratio.

In order to find out the relationship between CCC and firms performance, Yasir, Majid and Yousaf (2014) examined the impact of different component variables of cash conversion cycle (CCC) which includes receivables collection period, inventory conversion period and payables deferral period for the period of 6 years from 2007 to 2012. The findings showed negative relationship between firms' cash conversion cycle and profitability.

Mutaju (2014) assessed the relationship between working capital management and profitability of manufacturing companies listed in East African Stock Exchange markets in the

period 2005 to 2012. Using multiple regression analysis, it was observed that there exists a significant relationship between the components of working capital especially cash conversion cycle and profitability. CCC was negatively related to operating margin.

Nasreen, Khanam, and Pirzada (2014) uses the dataset of 45 listed companies in the food sectors of Pakistan for the period 2008-2012 and reported that strong positive association exists between working capital management and firm's profitability.

Nyamweno and Olweny (2014) examined the effect of working capital management on performance of firms listed at the Nairobi Securities Exchange in Kenya using a sample of 27 listed firms for the period of 10 years from 2003 to 2012. Employing a robust generalized method of moment (GMM) analysis, the results revealed that days of accounts receivables and cash conversion cycle have an indirect effect on performance measured by gross operating profit while days of accounts payables and days in inventory have significant and direct effect on performance.

Anser and Malik (2013) examined the effect of cash conversion cycle and firms profitability of listed manufacturing companies of Pakistan taking into consideration 5 years financial statements data starting from 2007 to 2011. Their regression results showed that cash conversion cycle is having significantly inverse association with both return on

assets and equity indicating that lesser the cash conversion, greater would be the profitability measured through ROA and ROE.

Sadia, Abdul, Saba and Tariq (2013) used the sample of 32 companies selected randomly from three manufacturing sectors of Pakistani firms for the period of five years ranging from 2006 to 2010. They examined the impact of different variables of cash conversion on firms performance and found that average collection period of accounts receivables, inventory conversion period and cash conversion cycle have negative relationship with firms' performance.

Takon (2013) examined the impact of CCC on ROA of selected Nigerian quoted firms for the period of 10 years starting from 2000 to 2009. Using multiple regression techniques, the results showed that cash conversion cycle had a negative relationship with profitability (ROA).

Addae and Nyarko-Baasi (2013) applied the regression and correlation analysis on the data of non-listed Ghanaian firms comprising of years 2004-2009 and reported that inverse association exists between the profitability of the firms and the cash conversion cycle.

Al-Shubiri and Aburumman (2013) investigated the relationship between CCC and financial characteristics of Jordanian industrial sector covering the period 2005 to 2011. The results of their study indicated that there is significant and positive relationship between CCC and

independent variables such as debt, market, productivity, liquidity and dividends indicator at different significant levels of 1% and 5% while the size indicator is weak relationship with significant level at 10% and there is no significant relationship with profitability indicator and cash conversion cycle. Tariq, Mumtaz, and Rehan (2013) use the panel technique to conclude the significant positive relationship between receivables, net trading cycle, CCC and performance whereas, negative insignificant relationship exists between inventory turnover, payable turnover and performance.

3.0 Methodology:

This study was predicated on ex-post facto and longitudinal research design. It made use of secondary data collected from ten quoted basic material companies between 2007- 2016. Out of the twelve companies under the basic material firms, only ten were quoted and actively traded before 2007. They constitute the population of the study. The companies are: African Paints Co., Aluminium Extrusion Industries, Berger Paints, BOC Gases Nigeria, First Aluminium Nig., CAP companies, DN Meyer, Premier Paints, Portland Paints & Products and Paints & Coatings manufactures. The variables of the study consist of the dependent, explanatory variables and control variable. The study used cash to cash cycle, cash cover ratio, quick ratio and current ratio as independent or explanatory variables; return on assets as dependent variable while debt ratio and sales growth were added as control variables.

Operationalization of Variables:

<i>Variables (code)</i>	<i>Proxies (operational definitions)</i>
<i>Return on Assets (ROA)</i>	<i>Profit Before Interest and Tax /Total Assets</i>
<i>Cash to cash cycle</i>	<i>Accounts receivable plus days of inventory minus days of accounts payable</i>
<i>Cash Cover Ratio (CCR)</i>	<i>Cash and cash equivalents/ current liabilities</i>
<i>Quick Ratio (QR)</i>	<i>Current assets- inventory /Current liabilities</i>
<i>Current Ratio (CR)</i>	<i>Current assets/Current Liabilities</i>
<i>Debt Ratio (DR)</i>	<i>Total Liabilities/Total Assets</i>
<i>Sales Growth (SG)</i>	<i>(Sales_t – Sales_{t-1})/Sales_{t-1}</i>

Model specification:

Consistent with previous studies, this model modified and extended the model tested by prior studies and the ordinary least square was guided by the following linear model

$$Y = F[X_1, X_2, X_3, X_4, X_5] \dots\dots\dots (1)$$

$$\text{Profitability} = F[\text{CCC}, \text{CCR}, \text{QR}, \text{CR}, \text{DR}, \text{SG}] \dots\dots\dots (2)$$

Based on the above model, we specify the following regression equation

$$ROA_{it} = \beta_0 + \beta_1 \text{CCC}_{it} + \beta_2 \text{CCR}_{it} + \beta_3 \text{QR}_{it} + \beta_4 \text{CR}_{it} + \beta_5 \text{DR}_{it} + \beta_6 \text{SG}_{it} + \epsilon \dots\dots\dots (3)$$

Where, ROA denotes the return on assets, CCC= Cash to cash cycle, CCR= Cash cover ratio, QR= Quick ratio, CR stands for current ratio while DR is the debt ratio and SG=Sales growth and Subscripts *i* denote number of firms, *t* denotes years or time-

series dimensions ranging from 2007-2016, ϵ is the error term of the model and $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \dots$ = Regression model coefficients.

4.0: Data Analysis and Interpretation

This study analyzes and interpreted the secondary data collected from the annual report of basic material companies. In analyzing the data, the study adopted the multiple regressions analysis to identify the possible effects of cash to cash cycle components on return on assets of quoted basic material companies in Nigeria. The study conducted some preliminary analysis such as descriptive statistics and correlation matrix.

4.1: Descriptive Analysis:

The descriptive statistics for the dependent, independent and control variables used in this study were presented in table 4.1 below.

Table 4.1: Summary of descriptive statistics for the variables employed in this study.

<i>Variables</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Std. Deviation</i>	<i>JB(P-value)</i>	<i>No. of observations</i>
ROA	0.3286	0.2651	0.7811	0.2144	0.0000*	100
ARR	10.079	8.0811	130.70	31.682	0.0000*	100
ICR	18.685	6.1812	64.101	19.130	0.030**	100
APR	30.096	24.011	188.20	22.561	0.0195**	100
CCR	0.0582	0.0373	0.9661	0.7689	0.0002	100
QR	1.2401	0.2138	6.3741	1.1443	0.0302**	100

Source: Researchers summary of result, (2017).

*Note: *1% level of significance, **5% level of significance.*

The descriptive statistics table above checks the normality distribution of all the variables by showing their mean, minimum, maximum values and Jarque–Bera (JB.) statistics. From the table, the proxy for firm profitability which is the return on assets (ROA) has a mean value of 33% approximately with the standard deviation of 21%. The maximum ROA is 78% while the minimum is 27%. This means that all the quoted firms sampled in this study were characterized by positive ROA. The firms' average receivable period of credit granted to the customers is 10days while the maximum period is 131days approximately. On the same vein, the firms take an average period of 30 days to pay their creditors with the maximum value of 188 days. On the average, basic material firms take 19 days to convert their inventory to sales (maximum conversion period is 64 days). That is to say that the 18.685 mean value of the days of inventory conversion ratio indicates that firms take approximately 19 days to change inventory to sales or receivables. By implication, it shows that basic material firms issue shorter credit period to their

customers while they hold cash due to their creditors longer as a delay tactic to reinvest in any available opportunity. It can be observed that the minimum values of cash cover ratio, quick ratio and current ratio were all below 1 and this implies that there are some basic material companies that are having liquidity problems despite being large in size. The problem can also be observed in the cash cover ratio which is the ultimate measure of liquidity by using only most liquid assets i.e. cash and cash equivalents. The average cash cover ratio is 0.0582 which is below 1 and indicates that the companies do not have enough cash and cash equivalents to cover for their short term obligations. Sales growth has a mean value of 1.581 with minimum and maximum values of 1.00 and 3.218 respectively with SD of 2.09 while debt ratio on the average has .4012 with minimum and maximum of 0.150 and 0.84 respectively.

Lastly, in table 4.1, the Jarque–Bera (JB.) which test for normality or existence of outliers or extreme value among the variables shows that return on asset (ROA), ARR, CCR, CR, SG are normally distributed

at 1% level of significance; ICR, APR and QR were significant at 5% while DR were insignificant. This means that no variables with outlier, even if there are, they are not likely to distort the conclusion and are therefore reliable for drawing generalization. This also justifies the use of ordinary least square estimation techniques.

Pearson's correlation matrix was applied to check the degree of association between Cash to cash cycle component and firms performance so as to determine the nature of association i.e. positive or negative correlation and the significance of the relationship between dependent variables and independent variables. The results of the correlation matrix is presented in Table 4.2

4.2 Correlation Matrix

	ROA	ARR	ICR	APR	CCR	QR	CR	DR	SC
Return on Assets	1.000								
ARR	-0.217*	1.000							
ICR	-0.187**	-0.180	1.000						
APR	0.230**	0.198	0.188	1.000					
CCR	-0.065	0.277	-0.122	0.024	1.000				
QR	0.431**	-0.10	-1.64**	0.067	0.406*	1.000			
CR	0.009*	-0.242	0.032	-0.08	0.417**	0.691*	1.000		
DR	0.010	0.008	0.063	0.006	0.050	0.123	0.090	1.000	
SG	0.001*	0.411	0.097	0.006	0.014	0.123	0.031	0.610	1.000

Source: Researchers summary of result, (2017) from E-view 9.5

Note: *1% level of significance, **5% level of significance.

The results from table 4.2 showed that ARR, ICR, CCR are negatively correlated with ROA indicating that increase in any of them will have a negative effect on the profitability of firms. That is to say that a firm with higher collection ratio and higher conversion ratio tends to exhibit low profitability as their money will be tied down in the hands of their customers. By implication this means that managers of basic material firms can increase their

profitability by reducing ARR, ICR and CCR. This negative relationship between ARR and ROA imply that increasing firm's receivables ratio lead to a declining profit. So from the above results it can be concluded that firm can increase its profitability by reducing the time period of accounts receivables, inventory conversion and cash cover ratio.

Table 4.3: Summary of panel regression result.
Dependent variable: ROA

Method: Panel least square

<i>Descriptive Variables</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistics</i>	<i>P-values</i>
<i>Constant</i>	0.4368	0.3255	0.4756	0.0400
<i>ARR</i>	-0.0969	4.2571	3.5820	0.0001
<i>ICR</i>	-0.0456	0.3569	4.1033	0.0311
<i>APR</i>	0.1783	0.8572	2.8781	0.0401
<i>CCR</i>	-0.2873	0.1283	3.7840	0.5601
<i>QR</i>	0.1435	0.7520	2.5090	0.0000
<i>CR</i>	0.1396	0.0231	2.4670	0.0431
<i>DR</i>	0.2743	0.1473	1.3920	0.6301
<i>SG</i>	0.0081	0.0031	3.1661	0.0002
<i>No of observations:</i>	240			
<i>R. Square</i>	0.782			
<i>Adjusted R-Square</i>	0.671			
<i>F-statistics</i>	12.23			
<i>Prob(F-statistics)</i>	0.000			
<i>Durbin-Watson Stat.</i>	1.871			

Source: Researchers summary of result (2017) from E-view 9.5

*Note: *1% level of significance, **5% level of significance.*

In Table 4.3 above, we observed that R-squared and adjusted R-squared values were 0.782 and 0.671 respectively. The value of R-squared which is the coefficient of determination stood at 78.2% which implies that 78.2% of the systematic variations in individual dependent variables were explained in the model while 21.8% were unexplained. Again, the adjusted R-squared stood at 67.1%. This indicates that all the independent variables jointly explain about 67.1% of the systematic variation in ROA of the sampled industrial firms over the 10years period while about 32.9% of the total variations were unaccounted for, hence captured by the stochastic error term. The F-statistics of 12.23 and their P-values showed that all our regression models are generally significant and well specified. Moreover, the Durbin Watson statistic of 1.871 showed that the model is well spread and that

there have not been self or auto correlation problem and that error are independent of each other.

In addition to the above, the specific findings from each explanatory variable are provided as follows:

Cash Cover Ratio

From table 4.3 above, we observed that the regression coefficient relating cash cover ratio to return on asset was -0.2873 thus confirming a negative relationship between the cash cover ratio and firm profitability. This implies that a 1% increase in the cash cover ratio is associated with an increase in return on asset by 0.2873%. This confirms the a priori expectation of the research that as cash cover ratio decreases, profitability of industrial firms increases though not statistically significant. This finding is somehow related to the findings of Mutaju (2014) who found that cash cover ratio has a negative

relationship with return on assets. Though Mutaju's finding on cash cover ratio is statistically significant. However, based on the insignificant relationship found among cash cover ratio and profitability, we therefore accept our null hypothesis at the expense of the alternate hypothesis and state that cash cover ratio has no significant effect on performance of industrial firms in Nigeria.

Quick Ratio

From the regression result on table 4.3, we recorded that quick ratio has a positive coefficient value of 0.1435 which is statistically significant at 1%. This simply means that a 1% increase in quick ratio is associated with a significant increase in ROA by 0.1435%. In other words, as quick ratio increases, profitability of firms also increases by 14.4% approximately. Our study is consistent with the findings of prior studies like Bala et al (2016) who found that quick ratio has positive, strong and significant impact on return on assets but negates the findings of Mutaju (2014) who reported an insignificant relationship between quick ratio and ROA.

Current ratio was found to have a positive coefficient of 0.1396 which was statistically significant at 5%. This implies that a 1% increase in current ratio is associated with a significant increase in ROA by 0.1396%. By implication, this means that when current ratio increases, profitability of industrial firms increases by that percentage. Our finding is in line with the findings of Uwuigbe, Uwalonwa and Egbide (2012) who found positive relationship between current ratio and profitability.

Debt ratio was insignificantly positively related to ROA by 0.2743% which means that a 1% increase in debt ratio is associated with a significant increase in ROA by 0.2743%. It is further interpreted that if the firm increases its debt financing, it will lead to increase in profitability of the industrial firms in terms of financial cost. By implication it means that managers do not have to worry so much on the debt ratio when determining the strategy to increase their profits. This finding is in line with that of Anandasayanan (2014) but negates the findings of Duru and Okpe (2015) who reported a negative significant relationship between debt ratio and ROA.

Sales Growth: For this control variable, evidence is positively related to profitability as we observed from the regression result on table 4.3, we recorded that sales growth has a positive coefficient value of 0.0081 which is statistically significant at 1%. This simply means that a 1% increase in sales growth is associated with a significant increase in ROA by 0.0081%. This is consistent with prior studies of Duru and Okpe (2015) and Uwuigbe et al (2012) who believed that growth is part of the features for firm profitability and the creation of shareholders value.

5.0 Conclusion and Recommendations

In conclusion, we discovered that basic material firms were more sensitive to inventories and receivables. In addition to handling inventories skillfully, distributing trade credits proficiently among buyers had important effects in generating better business outcomes. All the cash to cash cycle components together resulted in days of cash conversion cycle to take a

strongly negative relationship with profitability. Above all the study concludes that the need for efficient cash management cannot be over emphasized. This is so because, the research work showed that the overall profitability measure and shareholders' value in the Nigerian basic material firms is enhanced if cash is properly managed as measured by the cash to cash cycle components. Again, companies can enhance their performance by lessening their length of cash to cash cycle through reducing the account receivables ratio, decreasing the inventory conversion ratio and increasing the credit payment period. Every corporate organization is mostly concerned about how to sustain and increase profitability, for that reason, they have to keep an eye on the factors that affect profitability. The study further concludes that the shorter the cash cover ratio, the more efficient cash is managed and ultimately the more profitable the firm; as less borrowing cost is involved. On the other hand, the longer the cash to cash cycle, the lesser the cash is made available and ultimately decreasing profitability due to increased borrowing cost.

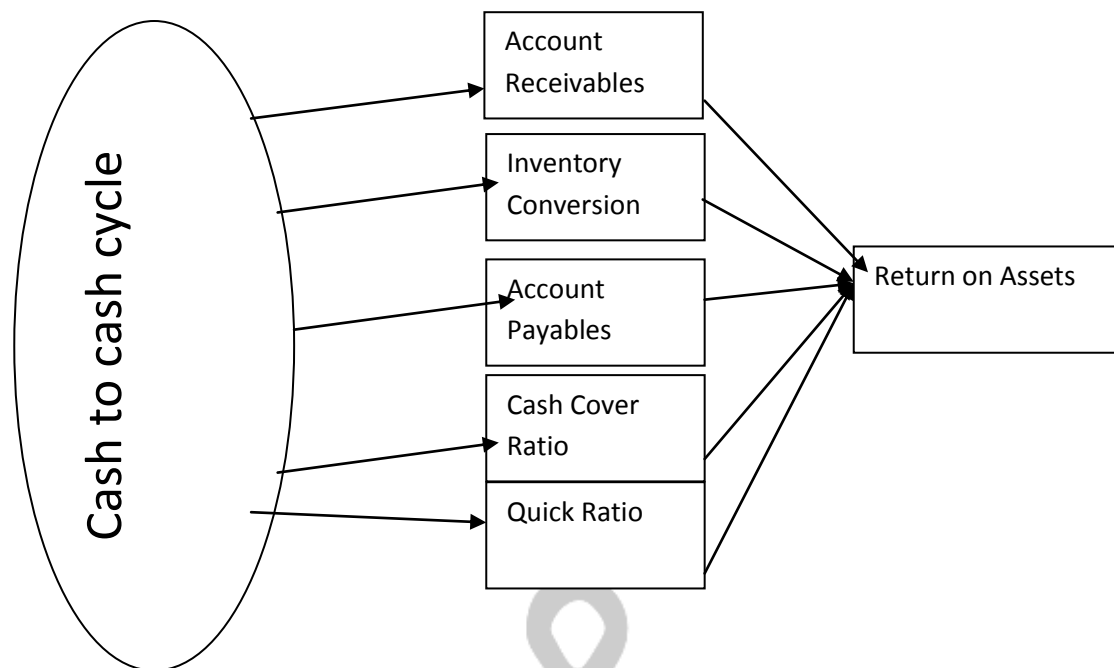
5.3: Recommendations

On the basis of the findings and conclusions of the study the paper recommends among others that:

- ✓ Managers of basic material firms should not emphasize much on the cash cover ratio since it is not statistically significant.

- ✓ The management of industrial firms should raise their quick ratio since it directly affects firm profitability.
- ✓ Current ratio should be increased since it has a direct and positive relationship with profitability.
- ✓ For cash to cash cycle, the management of basic material firms can improve the performance of their firms by reducing the time frame during which cash is tied down within the firms and also managers can create value by reducing the number of day's accounts receivables and inventory conversion ratio to a reasonable minimum.

Contribution to knowledge: This study has contributed immensely to the growing literature on cash to cash cycle components and profitability of basic material firms quoted in Nigerian Stock Exchange. Therefore, the contribution to knowledge can thus be conceptualized as follows:



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