



## IMPACT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF LISTED BUILDING MATERIAL COMPANIES IN NIGERIA

ABBAH, GRACE OJOCHENEMI & ILIYA BAWA, Ph.D

*\*Department of Accountancy Federal Polytechnic Nasarawa  
Nigeria \*\*Department of Business Administration Federal University Lokoja, Kogi  
State Nigeria*

### ABSTRACT

*This study is centered on the life-wire of every business organization. This study has empirically investigated the impact of Working Capital Management (WCM) on the profitability of listed building materials companies in Nigeria for the period of ten years (2007 – 2016) using data from a sample of nine companies. The proxies for WCM are debtors' collection period, credits payment period and Cash Conversion Cycle (CCC). The proxy for profitability is return on assets (ROA). Debt ratio is used as control variable. The Panel regression with the aid of review was used as the tool of analysis. The study reveals that creditors' payment period is negatively related to profitability of these listed building materials companies. Also, the study found an insignificant positive effect of debtors' collection period on profitability of listed building materials companies in Nigeria. Based on the findings, the study concludes that increase in creditors' payment period does not really matter to the liquidity position of listed building materials companies in Nigeria and the subsequent profitability. The study also concludes that increase in receivable days does not really matter to the profitability of the listed building materials companies in Nigeria. Therefore, the study recommends that listed building materials companies in Nigeria should intensify efforts towards seeing that the payable day to creditors is increased. Payments delayed should be invested in viable projects. Stringent control mechanisms should be put in place to ensure that monies with debtors are not delayed and finally they should desist from outside borrowing because of the high cost of capital associated with it.*

**Keywords:** *Working capital, Profitability, Debtors collection period, Creditors payment period, Cash conversion circle.*

### Introduction

The primary goal of any business entity is to make and advance in profit. This however, should not be their only goal because maintaining the liquidity of the business entity is as important as making profit. When a business entity is generating a lot of profit without giving due attention to liquidity, it is likely to have serious

difficulties like stock-out, over-trading, under-trading, insolvency etc ( Barine, 2012). Hence business organizations should give equal attention to profit making and judicious management of short-term assets and liabilities. For instance if business entities ignore profit, they may not remain in business for a long time. Also if they give little attention to their liquidity, they are likely to end up in insolvency and bankruptcy as a result of lack of immediate cash to address issues as they come up. Because of the foregoing reasons, management of business organizations should devote enough time and energy to their liquidity as they work towards profit making. The two goals are inseparable.

### **Statement of the Problem**

The realization of profit objective by firms makes other objectives like survival, growth and social responsibility become achievable. The stock of raw materials is therefore influenced by insufficient foreign exchange, poor transportation network and delays in clearing at the Nigerian port. Therefore the manufacturing activities of companies in Nigeria as well as supply of goods to buyers are affected. These elements also affect importers of finished products. Bad transportation facilities has obstructed transportation of raw materials to manufacturers and finished products to buyers within Nigeria. The purchases of company's goods have been affected by low per capital and disposable income of buyers in Nigeria. This is unfavorable to maintaining huge stock with attendant costs. The just-in-time system is therefore preferred by organizations because dilapidated facilities do not negatively affect it. However, this profit goal is hard to come by because of the difficulties most firms encounter in their pursuit of profit. Some of these problems are poor management of resources, most especially working capital, cash flow deficiencies, fall in sales turnover and profit margin, poor capitalization, operating below capacity, etc. To be able to tackle these problems, effective financial management is needed.

### **Research Questions**

The research questions of the study are;

- i. How does Debtors Collection Period (DCP) affect the Return on Assets of Listed Building Materials Companies in Nigeria?
- ii. What is the relationship between Creditors Payment Period and Return on Assets of Listed Building Materials Companies in Nigeria?
- iii. What is the relationship between Cash Conversion Cycle (CCC) and Return on Assets (ROA) of Listed Building Materials Companies in Nigeria?

## **Objectives of the Study**

The primary objective of this study is to ascertain the impact of working capital management on the profitability of Listed Building Materials Companies in Nigeria. The specific objectives are to;

- i. Determine the impact of Debtors Collection Period (DCP) on Return on Assets of Listed Building Materials Companies in Nigeria.
- ii. Assess the relationship between Creditors Payment Period (CPP) and the Return on Assets of Listed Building Materials Companies in Nigeria.
- iii. Examine the relationship between Cash Conversion Cycle (CCC) and the Return on Assets of Listed Building Materials Companies in Nigeria.

## **Statement of Hypotheses**

**H<sub>01</sub>:** Debtors Collection Period (DCP) has no significant effect on Return On Assets (ROA) of Listed Building Materials Companies in Nigeria.

**H<sub>02</sub>:** There is no significant relationship between Creditors Payment Period and Return on Assets of Listed Building Materials Companies in Nigeria.

**H<sub>03</sub>:** There is no significant relationship between Cash Conversion Cycle (CCC) and Return on Assets of Listed Building Materials Companies in Nigeria.

## **Literature Review**

### **Concept of Working Capital**

The items required for the daily manufacturing of products to be sold by a firm are referred to as working capital. It entails the surplus of short-term assets over short-term liabilities. It is the same as net current assets. This delineates the funds invested in assets that an organization anticipates its realization within the year's business activities. Its existence is not perpetual but as suggested by the name, its use is incessant, and being turned over many times in a year. Working capital is used to fund manufacturing of products, to invest in inventories and to grant trade credit to buyers. Cash, inventories, debtors, and creditors are its main components. They are either financed by short-term finance (short-term liabilities), or by medium and long-term finances (Akinsulire, 2008).

One of the very important criteria for the successful operations of all manufacturing firms in Nigeria is efficient working capital management. Management of circulating capital is considered as a significant part of corporate finance because it has direct effect on the performance of a company. The main focus of business decisions regarding working capital is proper control of the relationship that exist between a firm's current assets and current liabilities to ensure the continuous operation of its business activities and the availability of enough cash flows to settle maturing debts

and running costs economically as it works towards increase in corporate profitability. Barine (2012) asserts that working capital means the level of short-term assets and short-term liabilities that is necessary to be mixed with non-current assets for effective daily operation of a firm.

### **Concept of Profitability**

Eljelly (2004) see profitability as the capacity to generate more income than expenditure in order to allure and maintain investment capital. The measurement of profit earned in the operations of an organization is done by profitability ratio. Its measurement is in terms of percentage, for example, percentage of investment, percentage of sales, and percentage of assets among others. According to Fabozzi & Peterson (2003), an organization whose profitability percentage is high has the advantage of attracting funds from external sources due to the fact that creditors, suppliers and investors will be anxious to make investment in such organization. The measures of profitability available for use by an entity are many, some of these measures are: Return on Assets (ROA), Net Profit Margin (NPM), Return on Equity (ROE), Net Income of Firm and Operating Profit Margin.

**Return on Assets (ROA):** The ROA is employed in measuring return on assets of entities and serves as an indicator of profitability, the entity will be more profitable if the ROA is higher in value. The extent to which the management of an entity is efficient in making good revenue out of its assets is therefore indicated by ROA (Falope & Ajilore, 2009). Rather than the amount of return as a percentage of sales, managers and investors are more concerned with the return on capital invested. Organizations that carry out their activities in industries which require great degree of capital always have desirable profit margin, however, the requirement for huge capital makes it less attractive. This ratio elaborates on the efficiency of an entity in utilizing assets at its disposal to make returns. It shows the percentage of return an entity makes compared to assets per naira. The organization is doing better if the value of return on assets is higher. The following model is used for its computation:

$$\text{ROA} = (\text{Earnings Available for Common Stockholders} / \text{Total Asset}) * 100$$

**Net Profit Margin (NPM):** This computes the remnant amount in percentage per sale after interest, taxes, dividend, and other costs have been taken out. That is to say, it computes the profit in percentage that an entity makes compared to amount received for each sale. An increased amount of return on sale indicates improved performance.

$$\text{NPM} = (\text{Earnings available for common stakeholder} / \text{Net sales}) * 100$$

Consequently, the amount of and changes in business profits as a percentage of sales is important to be examined by the organization. For time to time comparison and

comparison with other firms to be better, the use of profit after tax but before deducting interest will be of benefit (EBIAT). One will therefore be permitted to place emphasis on profitability of business with no effect on how financing of assets is done.

### **Correlation of Working Capital Components and Profit Maximization in Nigeria**

Profit maximization proponents argue that a business entity is functioning mainly for the purpose of earning profit. Accordingly, the entity will venture into activities that will increase its profitability and avoid those that will decrease same. Maximization of profit can be achieved by either raising quantity of production for products on demand or lowering the production cost for a product. Traditional economic theory asserts that profit maximization can be based on to form an opinion on whether an entity is doing well economically or not in a perfect market; therefore, it is a standard for measuring economic efficiency. Also, profit maximization behavior results to proper allocation of resources with great value of social welfare by entities. In the quest to achieve the objective of profit maximization, the capital finance should be employed by the finance manager in a manner that will produce desired result because capital is a scarce resource. However, the profit in this circumstance is stated in indefinite terms because it may be interpreted either as profit before or after tax or the like, making this a major challenge with the profit maximization standard (Tanko & Uwaleke, 2015).

Nigerian companies just like their counterparts all over the world, make use of working capital for efficient operation. To ensure that the set standard is complied with, these companies plan for and maintain their cash and inventories among others. Materials are required for manufacturing products; finished stocks are required to satisfy customer needs, sales and return target of companies. The liquidity requirement of Nigerian companies is necessitated by cash. Nigerian companies create account receivable by granting trade credit due to the economic situation and its effects on income of buyers in Nigeria. The remaining circulating capital at the disposal of Nigerian companies is efficiently utilized to avoid disconcert in operations.

Fluctuating foreign exchange and monetary policies influences imported raw materials in Nigeria. The stock of raw materials is therefore influenced by insufficient foreign exchange, poor transportation network and delays in clearing at the Nigerian port. Therefore the manufacturing activities of companies in Nigeria as well as supply of goods to buyers are affected. These elements also affect importers of finished products. Bad transportation facilities has obstructed transportation of

raw materials to manufacturers and finished products to buyers within Nigeria. The purchases of company's goods have been affected by low per capital and disposable income of buyers in Nigeria. This is unfavorable to maintaining huge stock with attendant costs. The just-in-time system is therefore preferred by organizations because dilapidated facilities do not negatively affect it.

Short-term finance of Nigerian companies is limited to collections on sales due to high cost of credit facilities, thereby impairing increase in net circulating capital. The levels of circulating capital, management, planning and the operational effectiveness of Nigerian companies have been badly influenced, though advancement in the level of circulating capital for quoted companies.

### **Cash Conversion Cycle (CCC) Management**

Cash conversion cycle is a significant analysis tool employed by an entity to easily confirm the reasons more cash is needed for its operation and the timing and in what manner it will be possible to refund the cash (Elizalde, 2003). The time frame between when materials are paid for and when money is received from the sale of products entails the cash conversion cycle. Weston and Brigham (1997) pointed out that a cycle is typically followed by organizations in which inventory purchases are made, goods are sold on credit and then accounts receivable are collected. It may be given a more precise definition by a manufacturing concern as the sum of the period materials are held for processing and the time consumed by the process of production. Also, it include the sum of the time finished products are held and sold, and the time debtors take to settle their obligation, less the time for maturity of account payable. Therefore, it is quite evident that more investment in short-term asset will entail longer cash conversion cycle. In addition, the goodwill of the organization will be amplified, with the help of a good cash conversion cycle which will enhance its ability to settle its obligation when they mature. A poor cash conversion cycle on the other hand will impair the ability of the organization to settle maturing obligations thereby leading to financial distress. The efficiency of Cash conversion cycle is considered as a comprehensive measure of checking the efficiency of working capital management.

### **Empirical Review**

#### **Debtors Collection Period and Profitability**

Shah and Sana (2005) examined the correlation that exists between working capital management and profitability of oil and gas sector of Pakistan. Seven listed companies were sampled. 2001 to 2005 was the period of the study. Making use of correlation and Ordinal Least Square method using Fixed Effect Estimation model,

the study discovered that gross profit margin has an insignificant negative correlation with the inventory conversion period and number of days for receivables, though, profitability, cash conversion cycle and sales growth has insignificant positive relationship with each other.

### **Inventory Conversion Period and Profitability**

Mary, John & Laure (2010) studied the impact of stock on profitability of companies before and after two disastrous series of business interruptions of the September 11, 2001 terrorist attacks and Hurricane Katrina, in order to determine if there is an evidence that stock has been employed as a means of developing supply chain resiliency and how stable this relationship may be. Three years within this period of interruption was used to the study the macro-level effects on a company's profitability. Selected growth measures, and inventory levels across manufacturers, wholesalers and retailers was examined by applying univariate analysis. Utilizing data from annual reports, regression analysis was employed to insulate the impact of inventory on profitability and also to examine the possibility of discovering fluctuations in the relationship between inventory and profitability of companies. Outcome showed the impact of inventory on profitability of organizations, and indicated a major reduction in manufacturing after September 11 without much change after the Hurricane Katrina. The outcome of this research may not be suitable for generalization because of the peculiar nature of the periods of study.

### **Creditors Payment Period and Profitability of Firms**

Malik, Waseem and Kifayat (2013) scientifically experimented that due to its direct influence on profitability, effective management of circulating capital is crucial for an organization to be successful. Therefore, secondary data were collected from listed firms in Karachi Stock exchange spanned 2001 – 2006 in trying to test the relationship between profitability, and criteria for management of circulating capital. The population of the research is Pakistan textile industry, and the outcome of the research show that a significant positive relationship exist between profitability and cash, accounts receivable and inventory; but there is a negative correlation between profitability and account payable. Hence, this shows that the profitability of the organization will increase as a result of increase in cash, inventory and trade credit. However, increase in current assets result in tying down of resource that could be used to take advantage of investment opportunities

### **Cash Conversion Cycle (CCC) and Profitability of Firms**

Hasan, Halil, Arzu and Salih (2011) researched on the correlation that exists between efficiency of circulating capital management and profitability of firms. Companies listed in the Istanbul stock exchange were used for the study. 2005 – 2009 was the

period of the study. Panel data regression analysis was used. The results of the research indicated that reduction in the cash conversion cycle a proxy of working capital management affects return on assets (ROA) a proxy of profitability positively.

## **Theoretical Framework**

### **Rapa Port Theory**

The Rapa Port's (1986) theory is concerned with shareholder value network. It exposes clearly the link between value drivers. He was able to establish that to be effective in business, management must be guided by a set of principles that can be applied to decision making in various situations. Shareholders/owners of firms hire managers to act on their behalf in order to maximize profit. Hence the objective of the shareholder is value creation. According to the theory for shareholders value to be created, management has to concentrate on operation, investment and financing decisions. Hence proper management of working capital as one of the value driver will enhance profitability which will reach the shareholders in form of dividends.

## **Research Methodology**

### **Research Design**

This research work employs causal research design to explore the cause effect relationship between the independent variables and the dependent variable. The research intends to evaluate the relationship between Working Capital Management and Profitability of the Listed Building Material Companies in Nigeria.

### **Population, Sample and Sampling Technique**

The research population is all the sixteen listed Building Materials Companies in Nigeria that are quoted on the Nigerian Stock Exchange that are in existence during the period 2007 to 2016. Purposive sampling technique was used to select nine companies that are listed from 2007 to date. This is a non-probability technique that involves the conscious selection of certain participants by the researcher to include in a study because they have particular characteristics that are of interest to the researcher. The reason for the choice of the Building Materials Companies is based on the fact that being manufacturing firms, they usually have high stocks, sells goods on credit to their customers and also buy on credit from customers which requires high degree of accuracy and efficiency in managing working capital else they easily land in liquidity crises.

### **Method of Data Collection**

Since financial data is the bases of this research, the study made use of secondary source of data sourced majorly from their published annual reports. That is financial statements; statement of financial position, statement of comprehensive income and

cash flow statement of the Listed Building Materials Companies for the period 2007 to 2016.

### Technique for Data Analysis and Model Specification

The study made use of the panel regression with the aid of e-views to determine and analyze the relationship between working capital management and the profitability of listed building materials companies in Nigeria. Thus, working capital management was measured by debtors' collection period, creditors' payment period and cash conversion cycle. Profitability is measured by return on assets (ROA) as the dependent variable.

#### Model Specification

To express the model of the regression in equation form is:

$$ROA_{it-1} = \beta_0 + \beta_1 CPP_{it-1} + \beta_2 DCP_{it-1} + \beta_3 CCC_{it-1} + \beta_4 DEBT_{it-1} + \mu_{it}$$

Proxies

Debtors Collection Period (ACP) = Debtors/ Sales (365)

Creditors Payment Period (APP) = Creditors/ Cost of Sale (365)

Cash Conversion Cycle (CCC) = ACP + ICP – APP

Debt ratio = Total Debt/Total Assets

Profitability (ROA) = PBIT/Total Asset

### Data Presentation and Analysis

In this section, all the steps involve in analyzing and interpreting working capital management variables in terms of creditors payment period, debtors collection period, cash conversion cycle and the debt ratio which was used as control variable were analysed and interpreted. This is to say that, all the pre and the post residual diagnostics test such as Descriptive Statistics, Correlation Matrix, Hausman Test, Panel Regression Analysis, Multicollinearity Test, Serial Correlation Test, and Heteroskedasticity Test were run.

#### Descriptive Statistics

**Table 4.1 Descriptive Statistics on ROA, CPP, DCP, CCC, & DEBT**

	ROA	CPP	DCP	CCC	DEBT
Mean	5.814042	274.4046	52.48377	-119.7061	54.87674
Median	5.937970	158.6299	39.93975	4.609010	49.39363
Maximum	53.95940	2245.009	313.6846	186.6064	111.8924
Minimum	-70.34485	22.19733	6.780264	-2135.836	-41.45355
Std. Dev.	17.18935	400.5324	54.31110	415.6043	23.62211

<b>Skewness</b>	-0.298830	3.373475	2.997165	-3.225463	-0.149828
<b>Kurtosis</b>	7.314162	14.10619	12.40355	13.29304	5.399168
<b>Jarque-Bera</b>	67.97293	605.1128	445.6188	528.7607	20.94745
<b>Probability</b>	0.000000	0.000000	0.000000	0.000000	0.000028
<b>Sum</b>	500.0076	23598.79	4513.604	-10294.72	4719.400
<b>Sum Sq. Dev.</b>	25115.28	13636231	250724.1	14681788	47430.36
<b>Observations</b>	86	86	86	86	86

Source: *Researcher's Computation, 2017 Using Eviews Version 9*

Table 4.1 is the Descriptive Statistics with respect to ROA, CPP, DCP, CCC, and DEBT RATIO. The table describes the variables in terms of their Mean, Median Maximum, Minimum, Standard Deviation, Skewness, Kurtosis, and Jarque-Bera Statistics. It is sufficed to say that, the average scores with respect to ROA, CPP, DCP, CCC, and DEBT RATIO are 5.81, 274.40, 52.48, -119.70, and 54.87 respectively. The average Return on Assets of the Companies is 5.81% of the total assets of the companies, the maximum and minimum values are 53.95% and 70.3% with a standard deviation of 17%.

The minimum number of days the debtors require to pay their debt is 7 days while the maximum period is 314 days which is too high. On the other hand, the minimum creditors' payment period of the companies is 22 days and the maximum 2245 days. This is very high. The companies should operate within the average of 274 days to avoid losing credible suppliers.

The cash conversion cycle average value of the companies is 119.7 days. This implies that the period of time between the payment for materials and the receipts from the sale of the companies is about 120 days. On the other hand, the maximum number of days it will take the companies to convert payment for goods to receipt from sales is 186.6 days.

The respective Jarque-Bera coefficients and their probability values are less than the t-value of 0.05 (5%). This implies that, the data are not normal. However, it is noted that, the profitability, creditors' payment period, and debt ratio keep increasing over the period of study, and that could have said to be attributable to the persistent increase in the study variables. Conversely, debtors collection period and cash conversion cycle keep decreasing over the study period. Thus, this could not be a yardstick to deny the progress of the work even when the data are not normally distributed given the facts attributable to it.

### Correlation Matrix

**Table 4.2 Correlation Analysis**

	ROA	CPP	DCP	CCC	DEBT
ROA	1				
CPP	-	1			

	0.3224854084				
<b>DCP</b>	-0.0454271503	0.056692320	1		
<b>CCC</b>	0.3235757503	-0.986158155	0.060592573	1	
<b>DEBT</b>	-0.4023045793	0.3343580085	-0.1083909452	-0.3715618785	1

**Source: Researcher's Computation, 2017 Using Eviews Version 9**

Table 4.2 is the correlation result which indicates that there is a positive association between ROA and CCC of quoted Building Material Companies in Nigeria. Whereas negative correlations exist between CPP, DCP, DEBT RATIO and ROA of quoted Building Material Companies in Nigeria. The respective cases indicate the significance of the relationship given by 1.0000. The negative relationship between creditors payment period, debtors collection period, debt ratio and return on assets implies that when the return on assets is increasing, these other variables will be decreasing and vice versa.

**Robust Regression Analysis**

**Multicollinearity Test**

Variance Inflation Factors			
Date: 09/19/17 Time: 12:29			
Sample: 1 90			
Included observations: 86			
Variable	Coefficient Variance	Uncentered VIF	Centered VIF
<b>C</b>	22.68711	8.028459	NA
<b>CPP</b>	2.03E-05	1.677023	1.137054
<b>DCP</b>	0.000991	1.987504	1.021944
<b>DEBT</b>	0.005876	7.409181	1.146874

**Source: Researcher's Computation, 2017 Using Eviews Version 9**

The VIF for CPP, DCP, and DEBT are 1.13, 1.02, & 1.14 respectively. This indicates that, the VIF for CPP, DCP and DEBT are less than 10 respectively. Thus, the study concludes that there is no problem of multicollinearity, since multicollinearity exists only when the VIF is greater than 10.

### Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
<b>F-statistic</b>	0.889868	Prob. F(3,79)		0.4502
<b>Obs*R-squared</b>	2.713092	Prob. Chi-Square(3)		0.4380
<b>Scaled explained SS</b>	6.274551	Prob. Chi-Square(3)		0.0990
<b>Test Equation:</b>				
<b>Dependent Variable: RESID^2</b>				
<b>Method: Least Squares</b>				
<b>Date: 09/19/17 Time: 12:31</b>				
<b>Sample: 2 90</b>				
<b>Included observations: 83</b>				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
<b>C</b>	115.2536	29.22861	3.943179	0.0002
<b>D(CPP)</b>	0.218596	0.153522	1.423872	0.1584
<b>D(DCP)</b>	0.534841	0.931834	0.573966	0.5676
<b>D(DEBT)</b>	0.985118	1.554028	0.633913	0.5280
<b>R-squared</b>	0.032688	Mean dependent var		116.8108
<b>Adjusted R-squared</b>	-0.004046	S.D. dependent var		265.5464
<b>S.E. of regression</b>	266.0830	Akaike info criterion		14.05249
<b>Sum squared resid</b>	5593211.	Schwarz criterion		14.16906
<b>Log likelihood</b>	-579.1782	Hannan-Quinn criter.		14.09932
<b>F-statistic</b>	0.889868	Durbin-Watson stat		1.348683
<b>Prob(F-statistic)</b>	0.450179			

Source: Researcher's Computation, 2017 Using Eviews Version 9

The Breusch-Pagan-Godfrey Test of Heteroskedasticity on CPP, DCP, and DEBT given the Chi<sup>2</sup>Prob of 0.4380, indicates that the data are homoskedasticity. Thus the p-value of 0.4380 which is greater than 0.05, makes the study to accept the hypothesis that the residuals are homoskedasticity and is desirable.

### Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:				

<b>F-statistic</b>	1.729581	Prob. F(2,77)	0.1842
<b>Obs*R-squared</b>	3.568400	Prob. Chi-Square(2)	0.1679
<b>Test Equation:</b>			
<b>Dependent Variable: RESID</b>			
<b>Method: Least Squares</b>			
<b>Date: 09/19/17 Time: 12:31</b>			
<b>Sample: 2 90</b>			
<b>Included observations: 83</b>			
<b>Presample and interior missing value lagged residuals set to zero.</b>			
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>
<b>C</b>	0.015622	1.206936	0.012944
<b>D(CPP)</b>	-0.000158	0.006376	-0.024754
<b>D(DCP)</b>	-0.002904	0.038476	-0.075473
<b>D(DEBT)</b>	-0.009544	0.065523	-0.145652
<b>RESID(-1)</b>	-0.149809	0.117210	-1.278124
<b>RESID(-2)</b>	0.134144	0.118406	1.132918
<b>R-squared</b>	0.042993	Mean dependent var	-2.89E-16
<b>Adjusted R-squared</b>	-0.019151	S.D. dependent var	10.87361
<b>S.E. of regression</b>	10.97723	Akaike info criterion	7.699067
<b>Sum squared resid</b>	9278.472	Schwarz criterion	7.873923
<b>Log likelihood</b>	-313.5113	Hannan-Quinn criter.	7.769314
<b>F-statistic</b>	0.691832	Durbin-Watson stat	1.989785
<b>Prob(F-statistic)</b>	0.631134		

Source: Researcher's Computation, 2017 Using Eviews Version 9

The Breusch Godfrey Serial Correlation LM Test on CPP, DCP, and DEBT given the Observed R-Squared of 3.56 and the Chi<sup>2</sup>Prob of 0.1679, indicate that the data do not have problem of autocorrelation or serial correlation. Thus the p-value of 0.1679 which is less than 0.05 makes the study to accept the null hypothesis that the residuals do not have autocorrelation problem. It is posited to note that this result was conducted using first difference with a view to resolving the autocorrelation problem.

### Hausman Specification Test

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary				
	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	0.396860	3	0.9409	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
D(CPP)	-0.002735	-0.002673	0.000000	0.8908
D(DCP)	0.008108	0.005316	0.000164	0.8272
D(DEBT)	-0.333455	-0.324455	0.000281	0.5915

Source: Researcher's Computation, 2017 Using Eviews Version 9

The Hausman Specification Test indicates that Random Effect Model is most appropriate to Fixed Effect Model given the Chi-Square value of 0.3968 and its corresponding P-value of 0.9409 which is greater than the critical value of 0.5.

### Panel Regression Analysis Result

Dependent Variable: D(ROA)				
Method: Panel EGLS (Cross-section random effects)				
Date: 09/19/17 Time: 12:35				
Sample (adjusted): 2008 2016				
Periods included: 9				
Cross-sections included: 9				
Total panel (unbalanced) observations: 76				
Swamy and Arora estimator of component variances				

Variable	Coefficient	Std. Error	t-Statistic	Prob.
<b>C</b>	-0.240926	1.300832	-0.185209	0.8536
<b>D(CPP)</b>	-0.002673	0.006652	-0.401848	0.6890
<b>D(DCP)</b>	0.005316	0.049751	0.106851	0.9152
<b>D(DEBT)</b>	-0.324455	0.068907	-4.708576	0.0000
Effects Specification				
			S.D.	Rho
<b>Cross-section random</b>			0.000000	0.0000
<b>Idiosyncratic random</b>			11.30243	1.0000
Weighted Statistics				
<b>R-squared</b>	0.256076	Mean dependent var		-0.176638
<b>Adjusted R-squared</b>	0.225080	S.D. dependent var		12.19095
<b>S.E. of regression</b>	10.73164	Sum squared resid		8292.100
<b>F-statistic</b>	8.261380	Durbin-Watson stat		2.635837
<b>Prob(F-statistic)</b>	0.000085			
Unweighted Statistics				
<b>R-squared</b>	0.256076	Mean dependent var		-0.176638
<b>Sum squared resid</b>	8292.100	Durbin-Watson stat		2.635837

Source: Researcher's Computation, 2017 Using Eviews Version 9

The regression line  $ROA = -0.240 - 0.002CPP + 0.005DCP - 0.324DEBT$  indicates that ROA will decrease by 0.002units for every 1unit increase in Creditors' Payment Period (CPP), increase by 0.005units for every 1unit increase in Debtors Collection Period (DCP), and decrease by 0.324units for every 1unit increase in Debt Ratio. The respective P-values of 0.6890 & 0.9152 are greater than the t-value of 0.05, except for DEBT RATIO which is less than 0.05 (5%). The study therefore, accepts the null hypothesis, that the effect of working management in terms of CPP and DCP on profitability of quoted Building Material Companies in Nigeria is insignificant. The F-Statistics and its probability value indicate the fitness of the model. These are given by the F-Statistics of 8.261 and P-value of 0.0000. The coefficient of

determination ( $R^2$ ) of 0.256 indicates that about 26% of variation in profitability of quoted Building Material Companies in Nigeria can be explained by working capital management variables (i.e. CPP, DCP and DEBT).

### **Discussion of Findings**

It is evident from the above results and analyses that, working capital management in terms of Creditors' Payment Period is negatively related to profitability with statistical insignificance. This implies that, profitability of quoted Building Material Companies in Nigeria does not significantly increase with decrease in Creditors' Payment Period. This is to say that, even when there is reduction in the payment days to creditors, the money is not put into effective use to be able to maximize the profitability of the companies. This finding is in tandem with the findings in the previous works of Malik, Waseen and Kifayat (2013), Falope and Ajilore (2009) The study aligns with the theory of Agency which states that financial managers are agents of the owners (principals) of a firm, and are responsible for taking all relevant decisions that concerns all the current assets and current debts of a company. The findings of the study contradicts that of Mbawumi, Mbawumi and Nimako (2016) and Chawla, Harkawat and Kharmar (2010).

Similarly, the study found an insignificant positive effect of Debtors' Collection Period on profitability of quoted Building Material Companies in Nigeria. This means that, profitability of quoted Building Material Companies in Nigeria increases insignificantly with increase in receivable days from debtors. Thus even when receivable days increase, it rarely affects the liquidity position of the companies and its subsequent profitability. This finding is consistent with the findings in previous studies such as Mobeen and Naveed (2013), Ramachandran and Janakiraman (2007). The study is in tandem with the theory of Rapa Port which states that the objective of the shareholder is value creation. That proper management of working capital is one of the value driver that will enhance profitability which will reach the shareholders in form of dividends. The findings of the study contradicts that of Shah and Sana (2005), Okwo, Ugwunta and Agu (2012) and Kulkaya (2012). Nigerian companies just like their counterparts all over the world, make use of working capital for efficient operation. To ensure that the set standard is complied with, these companies plan for and maintain their cash and inventories among others. Materials are required for manufacturing products; finished stocks are required to satisfy customer needs, sales and return target of companies. The liquidity requirement of Nigerian companies is necessitated by cash. Nigerian companies create account receivable by granting trade credit due to the economic situation and its effects on income of buyers in Nigeria. The remaining circulating capital at the disposal of Nigerian

companies is efficiently utilized to avoid disconcert in operations. Fluctuating foreign exchange and monetary policies influences imported raw materials in Nigeria. The stock of raw materials is therefore influenced by insufficient foreign exchange, poor transportation network and delays in clearing at the Nigerian port. Therefore the manufacturing activities of companies in Nigeria as well as supply of goods to buyers are affected. These elements also affect importers of finished products. Bad transportation facilities has obstructed transportation of raw materials to manufacturers and finished products to buyers within Nigeria. The purchases of company's goods have been affected by low per capital and disposable income of buyers in Nigeria. This is unfavorable to maintaining huge stock with attendant costs. The just-in-time system is therefore preferred by organizations because dilapidated facilities do not negatively affect it.

Conversely, a significant negative effect of debt ratio on profitability of quoted Building Material Companies in Nigeria was found. This implies that, profitability of quoted Building Material Companies in Nigeria decreases with increase in debt to asset ratio of the companies. The finding supports the findings in the previous works such as Angahor and Agbo (2014) who also found a significant negative relationship between DR and ROA. However, this finding does not agree with that of Falope and Ajilore (2009) and Gill, Biger and Mathur (2015) who discovered a positive correlation between DR and ROA. This is sufficed to say that, as the companies depend largely on outsiders' funds, they tend to make ineffective use of the funds that resulted to poor profitability. This finding supports the theory of pecking order which states that, companies should not rely on outsiders' funds until all means of raising internal funds are exhausted. This is because of the high cost of capital that is associated with external borrowing.

### **Conclusion**

Based on the finding that Creditors' Payment Period is insignificantly negatively related to profitability of quoted Building Material Companies in Nigeria, the study concludes that increase in payable days to creditors does not really matter to the liquidity position of quoted Building Material Companies in Nigeria, and the subsequent profitability. This is obviously because they are relying much on borrowed funds. Thus, the companies do not really need to delay the payment of their creditors with a view to increasing their liquidity position. The study also concludes in relation to the insignificant positive effect of debtors' collection period on profitability of quoted Building Material Companies in Nigeria that increase in receivable days does not really matter to the profitability of quoted Building Material Companies in Nigeria. This is sufficed to state that, even when customers delayed in

paying the companies what is due from them, such delay will not affect the liquidity position of the companies that would enable them to invest more for better profitability. This can be attributable to the facts that, the companies are relying heavily on outsiders' funds (i.e. Debt Capital).

With respect to the significant negative effect of debt ratio and profitability of quoted Building Material Companies in Nigeria, the study concludes that the cost of capital (borrowing cost) is high. Thus as the companies depend on external loans that are usually associated with high cost, the profitability of the companies suffers since the companies spend high in external funding. Thus the profitability decreases as high proportion of the companies' earnings is paid as cost of borrowing. This hence decreases the profitability level of the quoted Building Material Companies in Nigeria.

### **Recommendations**

In the light of the above discoveries and subsequent conclusions, the study makes the following recommendations:

Quoted Building Material Companies in Nigeria should intensify efforts towards seeing that, the payable days to creditors is increased, and efforts should also be made to ensure that, the money delayed is put into effective use by way of engaging it into a viable investment for better profitability.

Quoted Building Material Companies in Nigeria should ensure that, stringent control mechanisms are put in place such that the companies' monies with their debtors would not be delayed. Although it is evident that even when there is such delay, it will not affect significantly the liquidity position of the companies. However, when these monies are collected, the companies can put them into more viable investment to enhance its profitability. Thus the need to reduce the receivable days is indispensable as this will increase the liquidity position of the companies and eventually improves its profitability.

Quoted Building Material Companies in Nigeria should desist from outside borrowing because of the high cost of capital associated with it. Thus they should stand to ensure that they raised their monies from internal sources like retained earnings, sale of owned fixed assets that are no longer needed, debt collection and sale of stock. They can only resort to external sources when all means of raising internal sources are exhausted. This will do a very good job of improving the profitability of the quoted Building Material Companies in Nigeria.

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