IOSR Journal of Economics and Finance (IOSR-JEF)
e- ISSN: 2321-5933, p-ISSN: 2321-5925. Volume 9, Issue 2 Ver. II (Mar-Apr .2018), PP 09-20
www.iosrjournals.org

Effect of Working Capital Management on the Profitability of Brewery Firms in Nigeria

Uguru, Leonard C.[1]; Chukwu, U. C.[2] and Elom, J. O.[3]
[1,2,3]*Department Of Accountancy, Banking & Finance,*
Ebonyi State University, Abakaliki, Nigeria

Abstract: *The study aims to determine the effect of working capital management on the profitability of brewery firms in Nigeria. This study adopts the ex-post-facto research design and employed the Ordinary Least Square (OLS) regression technique in analyzing the data. To ascertain the effect of working capital management (number of days account receivables are outstanding, number of days inventory are held, and cash conversion cycle) on the profitability (return on assets) of brewery firms in Nigeria, the study used the sample of Nigerian Breweries Plc and Guinness Nigeria Plc for the period of 2006 to 2014. And the findings suggest that the management of the number of days account receivables are outstanding, numbers of days inventory are held, and cash conversion cycle are significant factors in the accomplishment of the profitability objective of brewery firms in Nigeria. It was recommended that brewery firms should reduce heavy investments in current assets to avoid high inventory costs, and excess cash holdings and account receivables.*
Keywords: *Cash collection cycle, brewery, inventory, profitability, receivables, working capital management*

Date of Submission: 20-03-2018 Date of acceptance: 05-04-2018

I. Introduction

The management of working capital is among the most essential and vital aspect of the entire financial management of a business entity. This is because, efficiency in this area of financial management is necessary in order to ensure the firms long term success and to achieve its overall goals which is the maximization of owner's wealth. A certain amount of working capital is needed for operation of companies. This level of working capital constitutes the cash holding or near cash assets required of a bank by a statute of a government or it is necessary to note that the amount of working capital does not directly earn the firm any income since they are almost in all cases held in cash form. A well maintained working capital will ensure that there is smooth running of the business through the circulation of the vital ingredients in the firm (cash, inventory, receivables). Therefore, the number of days accounts receivable is outstanding, which determines the credit policy of the firm; the number of days inventory are held, which signifies the inventory management policy; and the cash conversion cycle, which is the comprehensive assessment of the quality and efficiency of the already established working capital management practices, are the tools that ensure that the daily operations of the firm are not hampered if well managed. How the working capital is managed will invariably determine the level of profitability in the firm. In other words the return on assets is a product of how the assets are managed. Good management of working capital will entails the reduction to minimum level the working capital requirement and realizing maximum possible revenues (Ganeson, 2007). The efficient utilization of the entity's working capital has a linear relationship with the profitability of that firm. Therefore, effective and efficient working capital management is well desired as it has significant effect on profitability and sustainability of companies (Mba, 2014).

At the same time, the main purpose of firms is to make profit for their shareholders. Brewery firms as well as other profit-seeking enterprises strive to increase the net income and present value of their net assets while recognizing immediate and long-run consideration. In the long-run, the concern of management is to provide satisfactory returns for their shareholders, which required holding a sufficient volume of safe and productive assets as well as sourcing funds through available source.

The effect of working capital management on profitability of brewery firms is of paramount importance because they require a balance to be maintained between the associated business risk and the level of efficiency to attain the desired amount of working capital. In most cases in manufacturing company, the amount of cash maintained by the company is usually over and above the successive year figure which could have been invested in a profitable project to increase the profit earning capacity of the company. This will give rise to excess cash in the till. Awan, *et al.* (2014) maintain that surplus cash lead to undesirable expenses on purchases and overstocking of stocks that will make the firm to incur carrying cost of theft, waste and losses. It is noteworthy to observe however, that large number of firm failures in the past was linked to the inability of the business

managers to effectively plan and control the working capital components of the firms (Smith, 1973 cited in Egbide, 2009). These observed inadequacies among the financial managers seem to be in practice these days in brewery firms in Nigeria in the form of high profile of bad debt (as a result of not managing the account receivable properly), high inventory cost (as a result of poor inventory management policy), and illiquidity (due to their inability to understand the cash conversion cycle). These inadequacies in the management and neglect of the working capital cycle due lead the firms to having longer number of days that the account receivables are outstanding, the number of days the inventory are held in warehouse, and shorter number of days it takes the firms to settle account payables.

On the gap in literature, the studies that are carried out on the working capital management and profitability on specific industrial sector are very few (Ghosh and Maji, 2004). Some of the known studies to the researcher are: Ani , Okwo and Ugwunta (2012), that studied on the working capital management and profitability of top-five brewery firms in the world; Okwo, *et al.* (2012) that examine the determinants of the profitability of beer brewery firms in Nigeria; Alex (2008); Okwo and Ugwunta (2012); Owuzu (2012), conducted different studies on performance of breweries in different countries. From the above, therefore, it can be seen that sufficient empirical studies on the working capital management and profitability in Nigerian brewery firms are not available, hence the need for this study.

The general objective of the study is to determine the implication of working capital management (proxied by the number of days account receivables are outstanding, the number of days inventory are held, and cash conversion cycle) on the profitability (return on assets) of brewery firms in Nigeria. Other sections of the paper are conceptual review, empirical review, theoretical framework, methodology, model specification, results/discussions, conclusion, and recommendations.

II. Conceptual Review

Working capital can be simply defined as the residual value when current assets are subtracted from the short term liabilities. ICAN (2014) defines working capital as the fund that an entity required to support its daily operating assets of a business. In Ani, Okwo and Ugwunta (2012), working capital is the inventory with the ability to be converted or resale so as to make profit. To operate a business effectively, an enterprise must incur cost on inventories and it must sell its goods or services on credit, holding inventories and selling on credit costs money (ICAN, 2014). Guthmann (1953) cited in Ismail, Mohammed and Wan Mohammed (2015) defines working capital in terms of "the portion of a firm's current assets which are financed from long-term funds". In the view of Napompech (2012), working capital is described as an amount invested on the entity's current assets in relation to current liabilities that are used to finance the investment.

Working capital management therefore, is the panacea by which the firm can accomplish the short terms liabilities that are due for payment and it is a condition that should be fulfilled for the operations of the entity to be sustained (Mohammed and Nasr, 2010). According to Ismail, *et al.* (2015), working capital management is concerned with the use of fund required for the day to day activities of the firm very well to attain the goals of the company. Van Horne and Wachowicz (1998) define working capital management as the use of an entity's current asset and the funding required to facilitate the short term asset. Also, Block and Hirt (2000) in Ebenezer and Asiedu (2013) observe that working capital management entails the management and financing of the short term assets and liabilities of the enterprise. Working capital management lies side by side within the two goals of an enterprise, which include profitability and liquidity. Thus, the major aim of working capital management is "to ensure that the firm is able to continue its day-to-day operations and it has the sufficient ability to satisfy its present and future short term expenses" (Varghese and Dhote, 2014:57). Working capital management (WCM) in the words of Mohammed, *et al.* (2015) is a process of planning for the acquisition and usage of short term assets. And it is the process of determining the organization's policy in planning for its current assets and liabilities holdings in financing its routine operations. In Pandey (2007), WCM means the administration of the constituents of working capital like payables, cash, receivables, inventories and others. Its focus is on the issues arising from trying to organize the short term assets between them (Soyemi and Olawale, 2014). For Owolabi and Alu (2012), WCM is the short-term decisions, usually for a year, that are reversible. This decision in the short run should be efficient as to keep the working capital of the firm at optimum level that will lie in between the excess and the shortage. This is to say that having adequate working capital level is essential and serves in adding value to the enterprise in the form of risk reduction and performance improvement (Akindele and Odusina, 2015).

Working capital management can be evaluated through the following variables:

Cash Conversion Cycle

Cash conversion cycle (CCC) means the whole yardstick of assessing the level of utilization of working capital in an organization. It can be described as the total number of days of sales outstanding (which is also termed average collection period) and the period of sales in days of inventory (also called inventory

turnover) less period of payable in days outstanding (termed average payable period). Cash conversion cycle is a vital tool of cash management that requires much fund to be afloat and the means of maintaining the good financial condition to repay the fund utilized (Elizalde, 2003). Angahar and Alematu (2014) consider CCC as the calculation of the period it will take between payment and collection of cash. They maintained that CCC is the period of time, in days, that it takes for the cash to be collected after sales, determined from the time the firm finally made payment for goods. Dong and Su (2010) opine that even though a firm can make loss within different accounting periods, it cannot continue to persistently operate with inefficient CCC management.

Similarly, ICAN (2014) describe the cycle as the average period between payment to creditors in exchange for inventories and services delivered and cash receipt from customers for resale of the supplies or services. ICAN (2014:286) also enumerated the three main elements in the cash conversion cycle as:

a. The mean period that inventory is held before it is used or sold;
b. The average credit period taken from creditors
c. The mean length of credit time taken by (or given to) account receivables

Studies in different countries and at different time have shown that there is a strong inverse association between profitability and the cash conversion cycle and then advised that financial controllers can generate returns for the firms by proper management of CCC and maintaining the constituents of CCC at the optimum level (Lazaridiss and Tryfonidis, 2005; Raheman and Nasr, 2007; Sadlovska and Viswanathan, 2007).

The Number of Days Account Receivable are Outstanding

Accounts receivable period evaluates the mean length of time, in days, that debtors are outstanding (Ani, *et al.*, 2012). Accounts receivable, also known as debtors, are credit customers that are yet to meet up with the payment condition for inventories or services rendered. Angahar and Alematu (2014) observed that the objective of managing accounts receivable is to reduce to minimal level the time it will take between sales of goods and services and the collection of cash. Deloof (2003) reveals that the profitability of firms can be increased through the reduction of the debtors' collection period.

The Number of Days Inventory are Held

Falope and Ajilore (2009) assert that inventory is made up of raw materials, work-in-progress, and/or final products. Number of days inventory are held, assesses how fast inventory move in organization from the factory to outlets of sale (Ani, *et al.*, 2012). It measures the mean number of period inventory remain in the warehouse before sale. Magwiro (2014) states that days inventory are outstanding denotes the average time-lapse in terms of days for goods to be purchased as raw materials converted into the finished good, and finally sold to the customers. Having in mind the increases or decreases in demands for products, production requirements and scarcity of resources, the financial manager has to keep at all times the optimal level of inventory (Iqbal, et al. 2014). Inventory management in successful firms, in the view of Helfert (2003) in Barine (2013), has changed to an effective means of maximum utilization of assets.

The number of days inventory are held can be referred to as inventory conversion period or quotient of inventory and cost of sales multiplied by 365 days. The inventory conversion period helps in evaluating the efficiency in inventory management policy of the firm (Ojeani, 2014).

III. Empirical Review

Charitou, Elfani and Lois (2010) studied the influence of working capital management on the financial result of 43 industrial firms listed on Cyprus Stock exchange from 1998 – 2007. Multivariate regression analysis was used to evaluate data generated from the reports of the individual firms. The results confirm that the components of WCM affect firm's profitability in Cyprus. Therefore, the study recommended that there should be efficient utilization of the firm's resources which will result to increase in profitability and eventually reduce volatility and improve the firm's value.

Sharma and Kumar (2011) investigate the impact of working capital on profitability of companies in India. It employed data from the audited financial statement of 263 non-financial firms quoted in the Bombay Stock Exchange (BSE) for the financial years 2000 – 2008. Using OLS to analyze the data, findings showed that WCM and profitability have positive correlation in India firms. However, it was equally observed that the number of days inventory were held and the number of days accounts payable were outstanding had negative correlation with the firms' profitability, while the number of days accounts receivable were outstanding and CCC were positively correlated with profitability of firms in India.

Saghir, Hashmi and Hussain (2011) examine the relationship of WCM with profitability of 60 textile firms between 2001 and 2006. Data were collected from those firms quoted in the Karachi Stock Exchange and the firms' observations of 360 were made. The data were analyzed using Pearson correlation and Analysis of Variance, and the result revealed that there exist a negative correlation between profitability and cash conversion cycle, and that low profitability was related with rise in number of days of accounts payable. They

conclude that low profitability textile firms stay longer period to fulfill their payment obligations thereby benefitting from the credit period given their creditors. It was recommended that financial experts should make returns for their firms through efficient maintenance of cash conversion cycle.

Owolabi and Alu (2012) conducted an ex-post-facto research to find out the influence of effective WCM on the profitability of 5 Nigerian quoted manufacturing firms. The multivariable analyses on the data reveal that the components of WCM individual influence the financial performance of the firms studied in different ways, while their effects as a group were not significant. The study then recommends that management of companies should always plan and control their operations properly, and also conduct periodic stock taking regularly.

Napompech (2012) examined the effects of WCM on the performance of firms listed on the stock exchange of Thailand for the time frame of 2007 to 2009. Using a sample of 255 firms in Thailand from 7 industries, panel data on 765 firms' observations were made and a Spearman Correlation was used to analyze the data. The findings of the study revealed a negative correlation between the WCM practices (inventory conversion cycle, and receivables period) and the profitability measures (gross operating profits) of the firms. It was then recommended that the financial managers should expedite action to improve on the profit level of the firms through the drastic reduction in the CCC, inventory conversion cycle and receivables collection period.

Vural, Sokmen and Cetenak (2012) investigate the impact of WCM on firm's performance and liquidity of 75 firms quoted on Istanbul Stock Exchange, Turkey from 2002 to 2009. The secondary data collected were analyzed using dynamic panel data analysis. The findings show that shortening the cycle of accounts receivable and cash conversion will definitely boost the profitability level of firms. It is recommended that extending the CCC and lowering gearing ratio will lead to increasing the value of the entity.

Mousavi and Jari (2012) evaluated the relationship between WCM and the overall performance of 56 quote firms on Tehran Stock Exchange, Iran. A regression model and correlation method was used to analyze data generated from the financial accounts and reports of the 56 firms. The result revealed that there are positive relationship between WCM and performance of firms. Recommendation was made that the net liquidity balance should be optimally maintained at all times by firms.

Ani, *et al.* (2012) investigates how the various constituents of cash conversion cycle influence the profitability of top five beer breweries in the world. The time series data sourced from the 5 beer breweries (Anheuser-Bush InBev in Belgium, SABMiller in UK, Heineken in Netherlands, Carlsberg in Denmark, and China Resources Brewery Ltd in China) were analyzed using multiple regressions after making sure that they are stationary and co-integrated. The findings show that WCM influence profitability of beer brewery firms. It was recommended that stockholding period and debtor's collection period should be brought down to not more than 30 days and 15 days respectively for the brewery firms.

Barine (2012) investigates the impact of WCM and profitability of 22 quoted firms on the Nigerian Stock Exchange (NSE). Data were collected using the 2010 annual accounts of the firms. The data were analyzed using the one – tailed test and pooled variance. The findings of the study indicates that profit margin on effective working capital condition of listed companies in Nigeria are below the required rate of returns of those firms, which shows inefficient result in the management of working capital. The study recommended among others that listed firms in Nigeria should concentrate on cash inflows, faster cash collection procedures and available discounts to make better the stance of their working capital conditions and improve on their profitability.

Ebenezer and Asiedu (2013) examine the nexus in working capital management and profit maximization of companies quoted on the Ghana Stock Exchange. The regression technique (OLS) analysis was employed to analyze the data and the findings showed that WCM affects the profit creation of companies in Ghana. The study recommends that manufacturing firms in Ghana should effectively manage the working capital components.

Oladipupo and Okafor (2013) studied on implications of WCM of firms on the corporate performance and dividend policy. Through the use of PPMC and OLS, data from 12 manufacturing firms listed in the NSE were analyzed. The findings revealed that lower leverage and net trade cycle was seen to be influenced positively by profitability but negative on rate of growth in earnings. The study then recommends effective WCM by firms to improve their profitability and dividend payment ratio.

Makori and Jagongo (2013) evaluate the effect of working capital management on the profitability of companies in Kenya from 2003 to 2012. Panel data from 5 productive firms each that are quoted on the Nairobi Securities Exchange (NSE) were employed. The result shows that profitability negatively relates with the period of time (in days) that debtors are outstanding and cash conversion period. However, it positively related with profit level and the period of time (in days) that inventory are held and the period of time (in days) that creditors are outstanding. With regards to the result, it was recommended that companies can delay payment to creditors if and only if, it will not negatively affect their relationship with the creditors.

Akoto, Awunyo-Vitor and Angmor (2013) examined the correlation between WCM and profitability of quoted manufacturing companies in Ghana. The paper used secondary data from thirteen listed firms between 2005 and 2009. Regression analysis was used in the analysis of the data collected and the result showed that accounts receivable days significantly and negatively influence profitability. On the other hand, there was significant positive effect of CCC and size of firm on profitability. They recommended that manufacturing firms should lessen their accounts receivable days to thirty days in order to maximize shareholders' wealth. Similarly Salman, Folajin and Oriowo (2014) evaluate the association between WCM and corporate performance of listed manufacturing firms in Nigeria. With 20 manufacturing companies, the data generated from the annual reports of the firms were analyzed through the Pearson Product Moment Correlation and multiple regressions technique. The findings revealed that working capital negatively and significantly relate with the profitability (measured by ROA and ROE) as 5% level of significance. It then recommended that the WCM components (CCC) should be reduced.

Angahar and Alematu (2014) investigate the implication of working capital management on the profitability of the Nigerian Cement Industry. The study used a period of 8 years (2002 – 2009) and data from 4 out of 5 cement firms listed on the Nigerian Stock Exchange. The analysis of the data collected was done through regression analysis technique and the results revealed a negatively correlation between the number of days inventory are held and the profitability (ROA) of the cement firms. The study recommended that managers of firms should properly manage their cash flows by minimizing their cycle of cash conversion.

Ikpefan and Owolabi (2014) investigate the connection between working capital management, liquidity and profitability of Nestle Nigeria Plc and Cadbury Nigeria Plc. Data were generated from the financial statements of the 2 companies and were evaluated through correlations and regression techniques. The study showed that liquidity and profitability are negatively related while trade payable payment period has a positive correlation for Nestle Nigeria Plc. For Cadbury Nigeria Plc, all liquidity ratios show positive relationship with profitability. They recommended that the quality of assets should be upgraded and obsolete inventories written off.

Magwiro (2014) examines the influence of working capital management on the profitability of retail firms in the South African economy. Panel data were generated through the time frame of 2009 to 2013 in South Africa. Firm data from 15 firms in the general retail sector listed on the Johannesburg Stock Exchange (JSE) was used and analyzed through panel data regression technique. The findings show that a significantly negative relationship exist working capital management and profitability of industries in South Africa. The study recommended that retail firms should choose the option of long-term debts which are mostly obtained under favourable terms of payment that will not subject the firm's cash position into difficulty. Also, retail firms should formulate alternative strategy on how to collect outstanding payments due to them faster.

Asaduzzaman and Chowdhury (2014) ascertain the impact of WCM on the profitability of Bangladeshi Textiles companies from 2008 to 2012. Data were collected from the annual accounts of 21 textile companies quoted on Chittagong Stock Exchange (CSE) and were analyzed through multiple regression technique. Results of the study showed that number of days account receivables, inventory of number of days, and cash conversion cycle are positively related with the profitability of the firm; whereas the number of day's accounts payable correlate negatively. The study concluded that firms can achieve good WCM by improving on profitability and liquidity. Also, Iqbal, *et al.* (2014) establish the nexus between WCM and profitability of 9 Pakistani Textile mills from 2006 – 2012. The data collected from the accounts and reports of the firms were analyzed using Pearson Product Moment Correlation and regression techniques. The result revealed that WCM and profitability of the Pakistani Textile Mills are negatively correlated.

Awam, *et al.* (2014) examines the correlation between WCM and profitability of cement sector in Pakistan. Using secondary data from 10 Pakistan cement firms on Karachi Stock Exchange, and with the use of multiple regression analysis and correlation coefficient, it was found that profitability negatively relates with the components of working capital management used in the study.

Nasreen, Khanam and Pirzada (2014) ascertain the effect of working capital management on the profitability of companies in Pakistan. With 45 companies sampled from the food sector that are quoted on Karachi Stock Exchange, secondary data from 2008 to 2012 were generated and analyzed using the Ordinary Least Square (OLS) technique. The result shows that working capital management practices are strongly related with firms' profitability in food sector in Pakistan. The study recommends that firms in the food sector should devise a means of efficiency managing their working capital for improved performance.

Mba (2014) investigates the influence of working capital management on profitability of Glaxo Smith Kline Pharmaceutical Company in Pakistan from 1996 to 2011. Secondary data collected were analyzed using OLS technique and the result shows a positive association among debtors' turnover, stock turnover and creditors' turnover on one hand and return on assets on the other hand. It recommends that principal officers of Pharmaceutical firms should keep efficient WCM so that they can multiply their profitability level. Similarly, Ojeani (2014) investigates the effect of working capital management on the accounting returns of

pharmaceutical firms listed on the Nigerian Stock Exchange (NSE) from 2002 to 2011. Multiple regression technique was employed to analyze the data and the findings show that WCM significantly affect the profitability of firms in Nigeria. The study recommends that the officers in charge should pay more attention to strategies of minimizing inventory days, collect receivable at the earliest time.

Pitt (2014) investigates the differences in the relationship between the efficiency of WCM, investment decisions on working capital, finance decisions on working capital and the profitability of ninety nine companies (68 from Nigeria and 31 from Kenya) from 2008 to 2012. The hypotheses were tested using the Spearman Rank Correlation and the result reveals that a significant difference exists in the relationship with the components of WCM and performance of firms in Kenya and Nigeria.

Takon and Atseye (2015) find out the impact of WCM on company's performance in Nigerian quoted companies. The study employed panel data in the analysis of the data. The findings show a significantly negative correlation between working capital management and profit level, while liquidity showed a positively significant relationship with returns on asset (profitability). Therefore, the study recommended that the firms should concentrate on the efficient management of WCM components and ensure that they are kept at optimal level for increased profitability.

Akindele and Odusina (2015) investigate the covariance between WCM and the profitability of 25 Nigerian quoted firms using data extracted from the audited accounts and reports of the firms. The study employed the use of multiple regression analysis and the findings revealed a negatively related association between the organizations's WCM and their profit level. The study recommends that the cash conversion cycle should be kept as low as possible.

Ismail, Mohammed and Wan Mohammed (2015) established the nexus between corporate governance on one hand and WCM and profitability of firms on the other. They used debtors, inventories, creditors and cycle of cash conversion as variables of WCM while return on assets was used for profitability measure. Using content analysis and literature review, the study revealed that corporate governance is vital to ensure that corporate entities operate smoothly to create value for the shareholders.

Fasesin, Ayo-Oyebiyi and Folajin (2017) examine the influence of working capital management practices on small scale enterprises (SSEs) performance in Osun State. Using purposive sampling technique, a sample of 100 small businesses from Osogbo, Ilesa, Ife, Iwo and Ede, all in Osun State was used. A structured questionnaire and oral interview were used to collect the data. Both descriptive and inferential statistics were employed to analyze the data collected. Findings indicate that cash management practices and trade credit management practices have insignificant positive influence on SSEs performance, while inventory management practices has insignificant inverse on SSEs performance. The study therefore concludes that working capital management practices are weak predictors of SSEs performance in Osun State, Nigeria. The study then recommends that the SSEs operators should be encouraged by governments at all levels by organizing extensive training in working capital management practices in order to boost their performance.

It is observed from the above empirical review of previous studies, therefore, that sufficient empirical studies on the working capital management and profitability in Nigerian brewery firms are not available, hence the need for this study.

Statement of Hypotheses

Flowing from the conceptual and empirical review, the following hypotheses were formulated and tested in the study:

- Ho_1: The numbers of days account receivables are outstanding do not significantly affect return on assets of brewery firms in Nigeria
- Ho_2: The numbers of days inventory are held do not significantly affect the return on assets of brewery firms in Nigeria
- Ho_3: Cash conversion cycle does not significantly affect the return on assets of brewery firms in Nigeria.

IV. Theoretical Framework

This study is anchored on the trade-off theory as developed in Myers (1984). The first version of the theory evolved with the addition of company income tax to the original irrelevance proposition of Modigliani-miller theorem, the benefit for debt was established because it provides tax haven for earnings. Bearing in mind the linearity in the objective of the firm, a total debt financing is implied reason being that the burden of debt cannot be removed.

The trade-off theory describes the scenario where a firm elects the level of debt finance and the amount of equity finance that should be used by striking a balance between the costs and benefits. In the opinion of Myers (1984), an organization that adopts this theory establishes a standard debt/value ratio and eventually acts

in the direction of the target. Murray and Vidhan (2005) stated that the set standard is arrived at by equating debt tax shields to the associated bankruptcy costs. The assumptions of the Myers trade-off theory are:

1. a decision maker managing a firm evaluates the alternative leverage plans as par the cost and benefit
2. That an interior solution is achieved to reach the optimum managerial costs and marginal benefits. Therefore, the trade-off theory describes the scenario where a firm elects the level of debt finance and the amount of equity finance that should be used by striking a balance between the costs and benefits.

The investors and business managers are mostly interested in maximizing returns and also minimizing the risk. Bratland and Hornbrinck (2013) observed the risk return trade-off as the amount of risk that one is willing to bear with it and equally in good terms with the returns made from the investment. However, the impact of risk is not clear, even if uncertain condition is assumed to be normally distributed. To that effect therefore, Bradley, *et al.* (1984) in Murray and Vidhan (2005) reveal that the gearing ratio is negatively correlated with volatility.

The relevance of this theory can be ascertained by relating the risk and return trade-off to WCM policies. For instance, an aggressive policy of working capital leads to the highest profitability but the least liquidity with its associated risk of insolvency that is usually high (Weinraub and Visscher, 1998; Chakraborty, 2006). The conservative or liberal policy on the other hand guarantees higher liquidity for the firm but with lower returns (profitability) and associated lower risk. Ani, *et al*. (2012) observe that the major aim of a business entity is increasing the shareholders' wealth to the highest level and this wealth maximization can be attained through maximizing the entity's return for the accounting period. This objective can only be achieved by adequate maintenance of the working capital components (current assets and current liabilities) and at the same time keeping abreast of the risk and return trade-off.

V. Methodology

This study adopts the ex-post-facto research design to establish the effect of working capital management on the profitability of brewery firms in Nigeria. The choice of this design is to estimate the impact of the independent variables (cash conversion cycle, number of days accounts receivable are outstanding, number of days inventory are held) on the dependent variable (return on assets), so as to establish a causal relationship among the variables. Hence the choice of the ex-post-facto design is in consonance with the objective of the study. The population of this study is made up of all the six breweries companies listed on the floor of Nigerian Stock Exchange (NSE).

To ascertain the effect of WCM on profitability of brewery firms in Nigeria, the Ordinary Least Square (OLS) regression technique was employed. The OLS technique was employed in the estimation and analysis of the data in consistent with the regression model stated above, for its effectiveness and efficiency in estimating the statistical relationship/effect of one variable on another variable (Ojeani, 2014). The sampling technique used in the determination of the sample size is the purposive sampling technique. The criteria followed in selecting the sample size are as follows: (a). the brewery firm is not on suspension from the Nigerian Stock Exchange market during the period of the study, and (b). readily available data. From the criteria, only 2 brewery firms qualified to be selected as members of the sample of this study. They are Nigerian Breweries Plc and Guinness Nigeria Plc. The products of these companies can be seen in every nooks and crannies of Nigeria. The secondary source of data was employed to collect secondary data from audited financial statements of the two firms. The data collection started in 2008 and ends in 2016 financial year of the firms. The study adopted return on assets (ROA) as the dependent variable used to measure the profitability of firms while the independent variables that measured the WCM practices include number of days accounts receivable are outstanding (DAR), number of days inventory are held (DIH), and cash conversion cycle (CCC).

Table 1: Measurement of Variables

Variables	**Abbreviation**	**Measurement**
Return on Assets	ROA	EBIT/Total Assets
Accounts Receivable Days	DAR	(Accounts Receivable / Sales) x 365 days
Inventory Conversion Days	DIH	(Inventory / Cost of Sales) x 365 days
Cash Conversion Cycle	CCC	(DAR + DIH) – DAP

Source: Researcher's Compilation (2017)

VI. Model Specification

In line with the reviewed previous studies (Deloof, 2003; Teruel and Solano, 2007; Padachi, 2006; Charitou, *et al.* 2010; Makori and Jagongo, 2013; Angahar and Alematu, 2014; Muhammad, *et al.* 2015), the profitability of firm measured by ROA is modeled as a function of the three major components of working

capital management (DAR, DIH and CCC). The researcher however included other controlled variables (age and size) in the model specification to avoid biased findings from the multiple regressions. Age and size were chosen as some of the firm characteristics.

The effect of working capital management on the profitability of brewery firms are modeled using the following multiple regression equations to obtain the estimates:

ROA = f(DAR, DIH, CCC, AGE, SIZE) … 1

Model 1: $ROA = \beta_O + \beta_1 AGE + \beta_2 SIZE + \beta_3 DAR + \varepsilon$ … 2

Model 2: $ROA = \beta_O + \beta_1 AGE + \beta_2 SIZE + \beta_3 DIH + \varepsilon$ … 3

Model 3: $ROA = \beta_O + \beta_1 AGE + \beta_2 SIZE + \beta_3 CCC + \varepsilon$ … 4

Where, AGE = the number of years in which the firm was incorporated

SIZE = log of turnover/sales

β_O = the intercept,

ε = error term (other variables not captured)

$\beta_1 - \beta_3$ = coefficient of independent variables

Models 1, 2 and 3 were used to test hypotheses 1, 2 and 3 respectively as formulated herein.

VII. Results And Discussions

Ho_1: The number of days account receivables are outstanding do not significantly affect return on assets of brewery firms in Nigeria

The above stated hypothesis is tested using ordinary least square through the model specified earlier.

Table 2: Regression Result for Hypothesis One

Dependent Variable: ROA
Method: Least Squares
Date: 02/11/17 Time: 06:53
Sample(adjusted): 2008- 2015
Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3377.886	873.3778	3.867612	0.0180
AGE	11.15176	2.796035	3.988419	0.0163
SIZE	-213.8014	53.86217	-3.969416	0.0165
DAR	2.212703	0.510254	4.336474	0.0123
R-squared	0.884974	Mean dependent var		54.39125
Adjusted R-squared	0.798704	S.D. dependent var		19.78865
S.E. of regression	8.878374	Akaike info criterion		7.511967
Sum squared resid	315.3021	Schwarz criterion		7.551688
Log likelihood	-26.04787	F-statistic		10.25824
Durbin-Watson stat	2.034062	Prob(F-statistic)		0.023835

Source: Researchers e-view Output of Data

To test this hypothesis, the value of F-statistics obtained from the estimation of the model was considered. F-Statistic, which apart from the R^2 also tells about the overall significance of the model, the value obtained through estimation was 0.023835. In view of the fact that this value is less than probability level of 0.05, the null hypothesis was rejected and the alternative hypothesis accepted that the number of days accounts receivable are outstanding do significantly affect return on assets of brewery firms in Nigeria. Also, the coefficients of AGE, SIZE and DAR are statistically significant at 5% level of probability with their values as 0.0180, 0.0163, 0.0165, and 0.0123 respectively. The rejection of the null hypothesis as a result of the analysis above implies that the number of days account receivables are outstanding do significantly influence return on assets (ROA) of brewery firms in Nigeria.

This finding is supported by the findings of Ani, *et al.* (2012), which show that WCM influence profitability of beer brewery firms. Some other known studies that agreed with this findings include Egbide (2009), Sharma and Kumar (2011), Vural, Sokmen and Cetenak (2012), Makori and Jagongo (2013), Akoto, Awunyo-Vitor and Angmor (2013), Angahar and Alematu (2014), and Akindele and Odusina (2015). However, the findings of the study of Napompech (2012) revealed a negative relationship between the WCM practices (receivables collection period) and the profitability measures (gross operating profits) of the firms.

Ho_2: The number of days inventory are held do not significantly affect the return on assets of brewery firms in Nigeria

Table 3: Regression Result for Hypothesis Two
Dependent Variable: LOG(ROA)
Method: Least Squares
Date: 02/11/17 Time: 07:09
Sample(adjusted): 2008 2015
Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-53.27231	31.66339	-1.682458	0.1678
LOG(AGE)	12.92317	8.823070	1.464703	0.2169
SIZE	-0.415718	1.195748	-0.347664	0.7456
LOG(DIH)	1.007572	1.018927	0.988856	0.3787
R-squared	0.538231	Mean dependent var		3.944839
Adjusted R-squared	0.191904	S.D. dependent var		0.332625
S.E. of regression	0.299010	Akaike info criterion		0.730177
Sum squared resid	0.357629	Schwarz criterion		0.769897
Log likelihood	1.079294	F-statistic		1.554112
Durbin-Watson stat	1.848870	Prob(F-statistic)		0.031624

Source: Researchers e-view Output of Data

To test this hypothesis, the significant of the explanatory variables and the value of F-statistics obtained from the estimation of the model were considered. The coefficients of explanatory variables – AGE, SIZE and DIH (0.2169, 0.7456 and 0.3787 respectively) were statistically insignificant. This suggests that these variables individually do not influence return to assets of brewery firms in Nigeria. However, the overall result shows that the value of F-Statistic obtained from the estimation was 0.031624, which is less than probability level of 0.05. This means the explanatory variables jointly influence return on assets of brewery firms in Nigeria. Based on the above analysis, the null hypothesis was rejected and the alternative hypothesis accepted. We then conclude that the number of days inventory are held do significantly affect return on assets of brewery firms in Nigeria.

This finding is corroborated by the outcomes of the studies of Sharma and Kumar (2011), and Angahar and Alematu (2014). In their different studies, their findings show that the number of days inventory were held and the number of days accounts payable were outstanding are negatively correlated with the firms' profitability.

Ho_3: Cash conversion cycle does not significantly affect the return on assets of brewery firms in Nigeria.

Table 4: Regression Result for Hypothesis Three
Dependent Variable: ROA
Method: Least Squares
Date: 02/11/17 Time: 07:14
Sample(adjusted): 2008 2015
Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1634.121	810.2472	-2.016818	0.1139
AGE	-4.195956	3.677027	-1.141128	0.3175
SIZE	101.3563	55.70353	1.819567	0.1429
CCC	-0.332794	0.093762	-3.549330	0.0238
R-squared	0.841956	Mean dependent var		54.39125
Adjusted R-squared	0.723423	S.D. dependent var		19.78865
S.E. of regression	10.40696	Akaike info criterion		7.829680
Sum squared resid	433.2195	Schwarz criterion		7.869401
Log likelihood	-27.31872	F-statistic		7.103143
Durbin-Watson stat	1.984812	Prob(F-statistic)		0.044288

Source: Researchers e-view Output of Data

In testing this hypothesis, the significant indication of the explanatory variables and the value of F-statistics obtained from the estimation of the model were considered. The coefficient of CCC (-0.332794) and probability level of 0.0238 shows that CCC is negatively significant at 5% level of significance. This implies

that CCC significantly influence return to assets of brewery firms in Nigeria. However, the coefficients of AGE and SIZE were statistically insignificant. The F-Statistic, which apart from the R^2 also tells about the overall significance of the model, the value obtained from the estimation was 0.044288. This value (0.044288), is less than the probability level of 0.05 and as such the null hypothesis was rejected while the alternative hypothesis was accepted that the cash conversion cycle does significantly affect return on assets of brewery firms in Nigeria.

The negatively significant effect result of this study was in agreement with the findings of Deloof (2003), Padachi (2006), and Rahman and Nasr (2007). Also, Murugesu (2013) investigated the impact of cash conversion cycle on the profitability of listed plantation firms in Sri Lanka and the findings indicated a negative relationship between cash conversion cycle and profitability, proxied by return on assets (ROA) and return on equity (ROE).

However, contrary to our results, Ebenezer and Asiedu (2013) examine the relationship between working capital management and profitability of companies listed on the Ghana Stock Exchange and the findings reveal a positive relationship between cash conversion cycle and profitability. In the same vein, Muscettola (2014) investigated the effect of cash conversion cycle on the profitability of selected Italian firms and the result shows a positive relationship between the two variables studied.

VIII. Conclusion

This study was focused on the processes of brewery firms in Nigeria, which is an essential and unique example of firms whose working capital management is an important driver of its profitability. Therefore, the study aimed to ascertain the effect of working capital management (number of days account receivables are outstanding, number of days inventory are held, and cash conversion cycle) on the profitability (return on assets) of brewery firms in Nigeria. Using the sample of Nigerian Breweries Plc and Guinness Nigeria Plc for the period of 2006 to 2014, the findings of the study suggest that the management of the number of days account receivables are outstanding, numbers of days inventory are held, and cash conversion cycle are significant factors in the accomplishment of the profitability objective of brewery firms in Nigeria. With the recent economic crisis in Nigeria and turbulent times experienced by manufacturing firms, the findings of this study as outlined above should be of great concern to Board of Directors and major stakeholders of brewery firms in particular. This is because efficient and effective utilization of the firm's current assets will result to increased profitability of the firm, which will consequently improve the firm's value.

IX. Recommendations

The researcher hence recommends that brewery firms in Nigeria should do their possible best to come up with a drastic reduction in the number of days account receivables are outstanding, number of days inventory are held, and cash conversion cycle. This drastic reduction will invariably give way for greater profit maximization of the brewery firms. In addition, the researcher made other recommendations as follows:

a. The brewery firms should adopt efficient and effective working capital management practices in order to keep working capital at optimal level and also improve their profitability.
b. The cash conversion cycle should be reduced to the maximum of fifteen days for brewery firms.
c. The number of days inventory are held in brewery firms in Nigeria should not be more than thirty days for improved profitability of the firms.
d. Brewery firms should reduce heavy investments in current assets to avoid high inventory costs, and excess cash holdings and account receivables.
e. The firms should constantly update their information on accounts receivables as a reminder to eliminating avoidable additional financial costs.
f. The brewery firms should most of the times anchors their working capital decisions on the net effects of such decisions on cash flow and profitability of the firm.

References

[1]. Akindele, J. A. and Odusina, O. (2015). Working Capital Management and Firm Profitability: Evidence from Nigerian Quoted Companies. Research Journal of Finance and Accounting, 6(7), 148 – 153.
[2]. Akoto, R.K., Awunyo-Vitor, D. and Angmor, P.L. (2013). Working Capital Management and Profitability: Evidence from Ghanaian Listed Manufacturing Firms. Journal of Economics and International Finance, 5(9), 373-379.
[3]. Alex, J. (2008). Rising Beer Prices could leave you tapped out Small Brewers Line Up to pay Premium Prices for Scarce Ingredient. Food Incorporation. Available online at www.msnbc.msn.com/rising-beer-prices-could... Retrieved on 20/02/2011.
[4]. Ani, W.U; Okwo, I.M; and Ugwunta, D.O. (2012). Effects of Working Capital Management on Profitability: Evidence from the Top Five Beer Brewery Firms in the World. Asian Economic and Financial Review, 2(8), 966-982.
[5]. Asaduzzaman, M. and Chowdhury, T. (2014). Effects of Working Capital Management on Firm Profitability: Empirical Evidence from Textiles Industry of Bangladesh. Research Journal of Finance and Accounting, 5(8), 175 – 184.
[6]. Awan, A.G.; Shahid, P.; Hassan, J. and Ahmad, W. (2014). Impact of Working Capital Management on Profitability of Cement Sector in Pakistan. International Journal of Business and Management Review, 2(4), 1-20.

[7]. Barine, M. N. (2012). Working Capital Management Efficiency and Corporate Profitability: Evidence from Quoted Firms in Nigeria. Journal of Applied Finance and Banking, 2(2), 215 – 237.
[8]. Block, B. S. and Hirt, G. A. (1992). Foundation of Financial Management, 6th Edition, USA.
[9]. Charitou, M.S., Elfani, M. and Lois, P. (2010). The Effect of Working Capital Management on Firm's Profitability: Empirical Evidence from an Emerging Market. Journal of Business and Economics Research, 8(12), 63 – 68.
[10]. Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? Journal of Business Finance and Accounting, 30(3) & (4), 573 – 587.
[11]. Ebenezer, A.B and Asiedu, M.K. (2013). The Relationship between Working Capital Management and Profitability of Listed Manufacturing Companies in Ghana. International Journal of Business and Social Research. 3(2), 25-34.
[12]. Egbide, B. C. (2009). Working Capital Management and Profitability of Listed Companies in Nigeria. Nigeria Research Journal of Accountancy, 1(1), 44-55.
[13]. Elizalde, C. (2003). Working Capital Management in Latin America. The Receivables opportunity. Citigroup.
[14]. Falope, O.I and Ajilore, O.T. (2009). Working Capital Management and Corporate Profitability: Evidence from Panel Data Analysis of Selected Quoted Companies in Nigeria. Research Journal of Business Management, 3: 73-84.
[15]. Fasesin, O. O; Ayo-Oyebiyi, G. T. and Folajin, O. O. (2017). Working Capital Management and its Influence of the performance of Small Scale Enterprises in Osun State, Nigeria. International Journal of Business & Law Research, 5(3):16-24
[16]. Ganeson, V. (2007). An Analysis of Working Capital Management Efficiency in Telecommunication Equipment Industry. Rivier Academic Journal, 3(2), Fall.
[17]. Helfert, E. A. (2003). Techniques of Financial Analysis. New York: McGraw-Hill Irwrin.
[18]. ICAN (2014). Management Information Study Text. Berkshire (UK): Emile Woolf International. 496P.
[19]. Ikpefan, O. A. and Owolabi, F. (2014). Working Capital Management and Profitability of the Manufacturing Sector: An Empirical Investigation of Nestle Nigeria Plc and Cadbury Nigeria Plc. Global Journal of Management and Business Research, 14(4), 20 – 27.
[20]. Iqbal, N.; Ahmad, N.; Kanwal, M., Anwar, S. and Hamad, N. (2014). Impact of Working Capital Management on Firm's Profitability: Evidences from Textile Sector of Pakistan. Arabian Journal of Business and Management Review, 2(5), 111 – 123.
[21]. Ismail, N.; Mohammed, N. and Wan Mohammed, W.N. (2015). Working Capital Management and Firm's Profitability: An Interaction of Corporate Governance Mechanism. E-proceeding of the International Conference on Social Science Research, Media Hotel, Kuala Lumpur, Malaysia, 8 and 9 June.
[22]. Lazaridis, I. and Tryfonidis, D. (2005). The Relationship between Working Capital Management and Profitability of listed Companies in the Athens Stock Exchange. Accessed online from http://papers.ssrn.com/so13/paper.cfm?abstractid=931591 on 20/10/2015.
[23]. Magwiro, A. (2014). How Relevant is the Working Capital Management in explaining Profitability in the Retail Sector Companies of South Africa?
[24]. Makori, D.M. and Jagongo, A. (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms listed on Nairobi Securities Exchange, Kenya. International Journal of Accounting and Taxation, 1(1), 1-14.
[25]. Mba, H.A. (2014). Impact of Working Capital Management on Profitability. European Scientific Journal. 10(1), 374 – 381.
[26]. Murugesu, T. (2-13). Effect of cash conversion cycle on profitability of listed Plantation Manufacturing Firms: An Empirical investigation of Nestle Nigeria Plc and Cadbury Nigeria Plc. Global Journal of Management and Business Research, 14(4), 20 – 28.
[27]. Muscettola, M. (2014). Cash Conversion cycle and Firm,s profitability: An Empirical Analysis on a Sample of 4,226 Manufacturing SMEs of Italy. International Journal of Business and Management, 9(5), 25 – 35.
[28]. Napompech, K. (2012). Effects of Working Capital Management on the Profitability of Thai Listed Firms. International Journal of Trade, Economics and Finance, 3(3), 227-232.
[29]. Nasren, S., Khanam, F. and Pirzada, S.S. (2014). Impact of Working Capital Management on Firm's Profitability. Research Journal of Finance and Accounting, 5(11), 210 – 222.
[30]. Ojeani, N.R. (2014). Working Capital Management and Profitability of Listed Pharmaceutical Firms in Nigeria. Unpublished M.Sc. Thesis in Ahmadu Bello University, Zaria. 84p.
[31]. Okwo, I.M. and Ugwunta, D.O. (2012). Impact of Firm's Input Costs on Profitability: Evaluation of the Nigerian Brewery Industry. Research Journal of Finance and Accounting, 3(6), 78 – 89.
[32]. Oladipupo, A. O. and Okafor, C. A. (2013). Relative Contribution of Working Capital Management to Corporate Profitability and Dividend Payout Ratio: Evidence from Nigeria. International Journal of Business and Finance Research, 3(2), 11-20.
[33]. Owolabi, S. A. and Alu, C. N. (2012). Effective Working Capital Management and Profitability: A Study of selected Quoted Manufacturing Companies in Nigeria. Economics and Finance Review, 2(6), 55 – 67.
[34]. Owusu, D. (2010). Evaluation of the Financial Performance of Ghana Breweries Limited after Merger and Enlistment on the Ghana Stock Exchange. Available online and retrieved on 15/12/2015 at http://hdl.handle.net/123456789/1296.
[35]. Padachi, K. (2006). Trends in Working Capital Management and its Impact on Firm's Performance: An Analysis of Mauritania Small Manufacturing Firms. International Review of Business Research paper, 2(2), 45 – 48.
[36]. Pandey, I. M. (2007). Financial Management. 9th Edition, New Delhi: Vikas Publishers.
[37]. Pitt, L.J. (2014). Working Capital Efficiency and Firm Profitability: Nigeria and Kenya. International Journal of Social, Behavioural, Educational, Economic, Business and Industrial Engineering, 8(6), 1661-1666.
[38]. Raheman, A. and Nasr, M. (2007). Working Capital Management and Profitability: Case of Pakistani Firms. International Review of Business Research Paper, (3(1), 279 – 300. Accessed on http://www.bizresearchpapers.com/paper%2019.pdf. Retrieved on 23/07/2015.
[39]. Sadlovska, V AND Viswanathan, N. (2007). Working Capital Optimization: Improving Performance with Innovations and New Technologies in Inventory Management and Supply Chain Finance. Accessed online from www.aberdeen.com on 12/10/2015.
[40]. Salman, A.Y.; Folajin, O.O. and Oriowo, A.O. (2014). Working Capital Management and Profitability: A Study of selected listed Manufacturing Companies in Nigerian Stock Exchange. International Journal of Academic Research in Business and Social Sciences, 4(8), 287 – 298. Accessed online from http://hrmars.com/hrmars_papers/working_capital_management_and_profitability.pdf. Retrieved on 5/12/2015.
[41]. Sharma, A. and Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India. Global Business Review, 12(1), 159-173.
[42]. Soyemi, A.A. and Maji, S.G. (2004). Working Capital Management Efficiency: A study on the Indian Cement Industry. The Management Accountant, 39(5), 363 – 372.
[43]. Takon, S.M. and Atseye, F.A. (2015). Effects of Working Capital Management on Firm Profitability in selected Nigerian Quoted Companies. International Journal of Economics, Commerce and Management, 3(10), 414-438.

[44]. Teruel, P.J.G. and Solano, P.M. (2004). Effect of Working Capital Management on SME Profitability. International Journal of Managerial Finance, 3(2), 165-1-77.
[45]. Van Horne, J. C. and Wachowicz, J. M. (2005). Fundamental of Financial Management, 12th Edition, New York: Prentice Hall Publishers.
[46]. Vural, G. and Sokmen, A.G. and Cetenak, E.H. (2012). Affects of Working Capital Management on Firm's Performance: Evidence from Turkey. International Journal of Economics and Financial Issues, 2(4), 488-495.

Uguru, Leonard C "Effect of Working Capital Management on the Profitability of Brewery Firms in Nigeria." IOSR Journal of Economics and Finance (IOSR-JEF) , vol. 9, no. 2, 2018, pp. 09-20.