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WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF LISTED CONSUMER AND INDUSTRIAL GOODS COMPANIES IN NIGERIA

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Abstract

Many businesses find it difficult to productively organize their working capital and this causes more trouble than expected because, without it, it is oftentimes difficult to successfully run these businesses and expect profitability, stability, and continuity. This study, therefore, considers the effect of Working Capital Management on the Profitability of Listed Consumer and Industrial Goods Companies in Nigeria. Data from the financial statements of the companies under investigation were used in the research. Generalized Least Square regression, variance inflation factor, multicollinearity, heteroskedasticity, and the Hausman specification test were used to analyze the data. It reveals that the inventory conversion time and working capital to revenue ratio have a significant outturn on their profit, however, the cash conversion period and current ratio have no impact on the profitability of listed consumer and industrial products companies in Nigeria, according to this study. It recommends that managers of consumer and industrial goods companies should adopt positive working capital policies and strategies aimed at enhancing the working capital structure by ensuring that the inventory conversion period is reduced to be the barest minimum for possible upward review of profitability. Thus, management must prioritize working capital management as it is currently viewed as a source of concern for many organizations.

Keywords: working capital management, consumer and industrial goods companies, profitability, return on assets

1. Introduction

The year 2020 was a very difficult one for many businesses as a result of the impact of Covid19 on their operations. Globally, businesses were forced to shut down in order to contain the virus from spreading further than it already has. The impact experienced by many businesses, especially manufacturing industries caused a major economic shock to the sector, particularly in their cash conversion cycle. The halting of business activities caused by the pandemic era led to a lower valuation of many companies' assets and this scenario caused so many effects on their short-term capital requisites making them unproductive in the management of their working capital. Governments all around the world in a bid to slow the spread of covid19 ordered a reduction in operations of businesses and most cases a complete shutdown of these businesses, especially industrial and consumer goods and services.

Working Capital Management, therefore, sought the attention of researchers as a result of this experience. When it comes to financial management, WCM is a particularly delicate topic that demands careful consideration in all businesses, regardless of their size (Dinku, 2013). Regardless of the size or type of the firm, every organization, profit-oriented or not, requires a significant amount of working capital and competent administration. Profit-oriented businesses' survival in today's seemingly vibrant business environment is in jeopardy unless they can meet their short-term obligations. The fundamental goal of WCM is to achieve an ideal balance between its proxies, it is safe to say that a well-organized and perfectly managed working capital will assist in improving the firm's operating capacity to achieve its short-term liquidity.

The flow of capital in any business environment is ultimately crucial to the company's survival as blood circulation is to a man's health (Korede, 2017). Working capital is referred to as a company's lifeblood, and it refers to the finances needed to run a business daily (Soyemi & Olawale, 2014, Umara et al., 2009). Lack of adequate working capital management remains one major reason why businesses will often run into trouble worldwide. It is very strenuous to run a successful business without it. Working capital, therefore, is a critical component of any business entity that demands immediate and appropriate attention, as well as correct setup and administration.

Due to the scarcity of a company's resources, management must ensure that the working capital of the company is well managed to achieve high profitability and overall performance. A company's profitability is thought to be largely determined by how liquid it is. While liquidity and profitability are not synonymous, they are both important goals for most businesses. Most businesses struggle to balance their working capital in a way that allows them to profit. As a result, they frequently incur debts, and their performance suffers in the long run, leaving the company unable to make its financial obligations on time.

The study's major goal is to find out the extent of the effect WCM has on the profits of Nigeria's listed consumer goods and industrial sectors. It is necessary to carry out this research in order to determine which proxies of factors of working capital management in Nigeria's consumer and industrial goods industries need to be increased, maintained, or decreased. The research attempts to answer the following questions:

- a) What is the effect of the cash conversion cycle on the ROA of the listed consumer and industrial goods sector in Nigeria?
- b) How does the inventory collection period impact the ROA on listed consumers and the industrial goods sector in Nigeria?
- c) Does the working capital ratio to revenue have any impact on the return on assets of the listed consumer and industrial goods sector in Nigeria?
- d) What is the extent of the effect the current ratio has on the return on assets of the listed consumer and industrial goods sector in Nigeria?

In light of the above questions, the following null hypothesis is proposed for the investigation:

H₀₁: The return on assets of the consumer and industrial goods companies is unaffected by the cash conversion cycle.

H₀₂: The return on assets of the consumer and industrial goods firms is unaffected by inventory collection periods.

H₀₃: The working capital to revenue ratio does not cause any variation in the return on assets of consumer and industrial goods companies.

H₀₄: In Nigeria, the current ratio does not affect the return on assets of the listed consumer and industrial products industry.

The outcome of this investigation will be valuable to the management of these companies in determining which aspects of working capital require special attention. This plan may include a shorter inventory holding/conversion period or an adjusted current ratio which may go a long way in the upward review of their profits.

2. Literature Review and Theoretical Framework

Working capital is the surplus of current assets over current liabilities in the gross concept, which is commonly referred to as gross working capital, where working capital is defined as the excess of current assets over current liabilities in the qualitative concept, which is commonly referred to as networking capital. Networking capital is the variance between a company's current assets and liabilities. As a result, this is the number of current assets that will be left once all current liabilities have been paid off. Working capital, according to Windaus (2014), provides a clear indication of how well a corporation is managed and reliably reflects proper management. The degree or volume of current assets and liabilities can have different effects on a company's profitability, for example, having too many current assets can alter the company's profitability; however, having too few current assets can steer a significant reduction in liquidity and stock-outs, which can make it difficult to maintain the best working capital.

Profitability is an investment's ability to generate a profit from its use. Every business's goal is to maintain a healthy financial position, which can only be accomplished if the company earns a profit on its investments. Any company that continually fails to make a profit on all of its investments is doomed to collapse. The ability and capability of a business to earn and maintain a healthy financial position are measured by its profitability. As a result, organizational performance is primarily judged by profitability, which can only be recognized when the organization's financial situation is strong and provides a positive message to stakeholders and potential investors.

Oladimeji and Aladejebi (2020) researched the impact on the profitability of SMEs in Nigeria from 2014 to 2018. The study used regression analysis to examine the impact of independent variables on SMEs' profitability. The research found no link between working capital management and SMEs' profitability, and it suggests that government policies should be focused on promoting SMEs' growth and that SMEs, in turn, should use prudent working capital management to improve their structure and profitability.

Iyewumi et al. (2015) studied the impact of working capital management on the oil and gas sector's profitability in Nigeria. For the period 1995 to 2011, secondary data was collected from a sample of two publicly traded oil companies in Nigeria. The study used the ordinary least square regression method and discovered that the cash conversion cycle, average days' receivables, average days' payables, average days' inventory, and firm size all have a substantial impact on the profitability of Nigeria's oil and gas business.

Sabo et al. (2015) examined the impact of working capital management on corporate profitability in seven (7) Nigerian listed companies from 2008 to 2012. The results show that for the period studied, there is a positive and significant effect of Average Collection Period (ACP), Current Ratio (CR), and firm size (LOG SIZE) on profitability, as well as a negative effect on Inventory Turnover Period (ITP) and Average Payment Period (APP) on profitability.

Onodje (2014) investigated how the internal financial activity of working capital management affects the performance of seventy-five (75) listed manufacturing companies in Nigeria for the period 2002-2012, data was gathered from the companies' publicly available financial statements and evaluated using fixed effect, random effect, and one-step difference GMM approaches. According to the findings, working capital management is a determinant of manufacturing company performance in Nigeria. Manufacturing performance is positively connected to the payable conversion period and inventory conversion period, whereas manufacturing performance is negatively related to payable deferral duration, cash conversion cycle, and debt-equity ratio period. Finally, liquidity as measured by the quick ratio has no bearing on the firm's success.

Kajola et al. (2014) studied the impact of working capital management on the financial performance of thirty (30) industrial companies listed on the Nigerian Stock Exchange for the period 2004 to 2010. The findings of the research using the ordinary least square regression method revealed that working capital management, as evaluated by the cash conversion cycle, is negatively and significantly connected to the firm's financial success, as assessed by return on assets.

Angahar and Alematu (2014) investigated the impact of working capital on the profitability of the Nigerian cement industry. The research was conducted over eight years, from 2002 to 2009, and the results revealed an insignificant negative influence of account receivables on profitability, while cash conversion had a significant positive effect on the profitability of the selected organizations.

Soyemi and Olawale (2014) researched the comparative analysis of working capital management of brewery companies in Nigeria and obtained data from texts, journals, and annual reports of the selected firms. The major finding from the study indicates that some of the companies were much more efficient when it came to receivables because they recorded high inventories and debtors while others were more efficient when it came to payables as their payback periods were shorter. The study recommended that the utmost concern of breweries and other manufacturing industries should be the management of their working capital by accelerating their collection periods and slowing down their payment period.

Owolabi and Alu (2012) examined the effective working capital management and profitability of quoted manufacturing companies in Nigeria for the period 2006 to 2010. Working capital management had no substantial effect on the profitability of listed manufacturing companies in Nigeria, according to the study, which used a purposeful sample technique and five companies for the study. Management should improve in the area of cash flow management, according to the study, to increase the firm's worth in terms of profitability.

Uremadu et al. (2012) researched the topic effect(s) of working capital management and liquidity on the corporate profitability of quoted firms in Nigeria through cross-sectional time-series data for the period 2005-2006. The results showed that there is a positive effect on the inventory conversion period, debtors' collection period, and a negative effect on the cash conversion period, creditor's payment period, on performance measured by return on assets, using descriptive statistics and an ordinary least squares regression model.

Owolabi and Obida (2012) studied the association between liquidity management and corporate profitability of selected manufacturing firms listed in Nigeria, data was gathered

from the companies' published annual reports, and descriptive analysis was used to demonstrate that liquidity management, as measured by the company's Credit Policies, Cash Flow Management, and Cash Conversion Cycle, has a positive coefficient and a significant outturn on corporate profitability over the period studied.

Ogundipe et al (2012) studied the impact of working capital management on firm performance and market value of listed non-financial in Nigeria, a sample of 54 companies was taken. The data analyzed was gathered from the companies' annual reports from 1995 to 2009. The results reveal that the cash conversion cycle has a considerable negative impact on market valuation and business performance. The study also discovered that the debt ratio has a beneficial impact on market valuation while hurting business performance.

The Agency theory, risk, and return theory, operation and cash conversion theory, operational circle theory, and resource-based theory are all theories related to working capital management. This research is based on the risk and returns hypothesis, which is considered one of the most significant in portfolio management. Every investment decision is made based on the risk-return relationship (Richard, Stewart & Franklin, 2008). The notion that working capital management involves a barter between profits and liquidity ties working capital management to this idea. When a company chooses to be liquid, it sacrifices earnings, and vice versa. Any of these options, whichever one is made, may result in a shortage or excess of working capital components in any business.

3. Methodology and Model Specification

This study's population consists of 32 consumer and industrial products firms that are listed on the Nigerian Stock Exchange as of December 31, 2020. The usage of publicly-traded consumer and industrial products companies is justified by the data's availability and consistency. The impact of working capital management on financial performance, specifically profitability, of listed consumer and industrial goods companies in Nigeria, is investigated in this study. The study used the Census sampling technique, which meant that the sample included the whole population. The study used Panel data from secondary sources that were quantitative, and data was taken from the firms' audited financial reports during the study period. After executing the appropriate tests and other robustness tests to assess the validity, the extracted data were analyzed using the Stata 14 statistical program, and the results were utilized to test the specified hypotheses.

Profitability is the study's dependent variable, which is a return on total assets in operation, while the independent variables are cash conversion circle, inventory conversion period, working capital to revenue ratio, and current ratio (i.e. working capital components). Return on Assets is employed in this study because it demonstrates how successfully and efficiently a company uses its resources to generate money. To put it another way, it's a sign that a business is running smoothly. These variables were compiled and analyzed using a multiple regression model with STATA 14 to show how working capital management variables affect profitability in Nigerian consumer and industrial goods industries. The following is the regression analysis model that was used:

$$ROA_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 ACP_{it} + \beta_3 WCR_{it} + \beta_4 CR_{i,t} + e_{it}$$

Where;

ROA = Profitability of Consumer and industrial goods companies demonstrated by Returns on Asset

B_0 = Intercept, which is the value of Y when X values are zero.

CCC = Cash conversion cycle

ICP = Inventory Conversion Period

WCR = Working Capital to Revenue

CR = Current ratio

e = Error term normally distributed about the mean of zero

$\beta_1, \beta_2, \beta_3,$ and β_4 are coefficients for CCC, ICP, WCR, and CR respectively.

4. Results and Discussion

This section summarizes the findings of the study's data analysis and interpretation. The first portion offers a preliminary examination of the study sample using descriptive statistics, as well as a brief overview of the numerous robustness tests used to show the validity and dependability of the results. The regression results and findings of the explained and explanatory factors will be presented in the second half, and the discussion and testing of the study hypothesis, as well as implications from the findings, will be presented in the third part.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	320	4.878	17.006	-179.92	108.9
ccc	319	-3.297	282.064	-1923.49	2711.76
icp	319	85.491	171.733	1.62	2550.07
wcr	320	.0189	.399	-3.14	.76
cr	320	1.324	1.298	.02	15.87

Source: Stata 14 Output, 2022

Table 1 summarises and interprets the explanatory variables, including mean, standard deviation, minimum, and maximum data set values for each variable. The average ROA for 320 observations is 4.878125, with a standard deviation of 17.00696 as shown in the table. This means that during the study period, there was a considerable difference in profitability values across the listed companies.

The average value for the cash conversion circle is -3.297774, with a standard deviation of 282.0641. This means that the cash conversion circle of the listed companies under investigation varies greatly. The data also reveals that the average conversion period has a mean value of 85.49163, a standard deviation of 171.7331 and a low of 1.62, and a high of 2550.07. The mean working capital to revenue ratio is 0.0189687, with a standard deviation of 0.399629, indicating that there are few differences in the practices of the listed companies under investigation.

It also demonstrates that their poor working capital management and inability to strategically manage it could result in very low profitability. The current ratio average from the observations is 1.324281, meaning that the liquidity level across the companies is 1.324281 and the standard deviation is 1.298332, with the lowest liquidity level being 0.02 and the highest being 15.87.

Diagnostic Tests Results

The Shapiro Wilk and Shapiro Francia data normality tests were conducted, and the results revealed that the data gathered for all variables were not normally distributed. As a result, instead of using the conventional stochastic standard error term in regressions, the robust

standard error is utilized to ensure the validity of the study results. This is done to address the data's normality issue and ensure the regression results' validity.

The data set was additionally tested for multicollinearity using the Heteroskedasticity Test. This was done to satisfy one of the classical linear regression models' assumptions, which specifies that disturbances in population regression are homoscedastic. This indicates that the variance of the error component in the regression model is consistent; errors that do not have constant variance (are heteroskedastic) are called heteroskedastic. The presence of heteroskedasticity in the model's error term is indicated by a large chi-square value in the heteroskedasticity test result.

The chi-square value was large and the p-value was little in the Heteroskedasticity test done in this study, indicating a violation of the traditional linear regression assumption indicated above. As a result of the occurrence of heteroskedasticity, the researcher chose to use fixed and random effect regression to account for individual differences within units. This will ensure that any findings or inferences reached are accurate.

Table 2: Regression Result

Variable	Coefficient	Z- Value	P-Value
CCC	0.0040	1.18	0.238
ICP	-0.02910	-3.03	0.002
WCR	11.91567	2.45	0.014
CR	0.9952	1.01	0.0312
Constant	5.5258	3.36	0.001
R -Square = 0.16000			
Wald chi2 = 40.55			
Prob>Chi2 = 0.0000			

Source: Stata 14 Output, 2022

The Hausman specification test revealed that a random-effects model is the better appropriate model for this regression. The random effect model result for ROA is shown in the table above; the test indicated an insignificant probchi2 value of 0.1324 (higher than 0.05 or 5% level of significance), which explains why the random effect model result is presented.

The cash conversion circle has a positive insignificant influence on ROA in the model, implying that a unit increase in the cash conversion circle leads to an increase in ROA of about 0.04. With a value of 0.002 at a 5% level of significance, inventory conversion time has a negative significant influence on ROA, implying that a unit increase in inventory conversion days results in a -2.91 percent loss in ROA. This demonstrates that some of the companies in this study store inventory for much too long before disposing of it; the longer inventory is held, the longer returns on assets are delayed, and those companies may lose money if inventory is maintained for longer than necessary.

Working capital ratio to revenue has a positive insignificant effect on ROA, implying that a unit increase in WCR increases returns on assets by 11.91 percent. However, the insignificance could indicate that the management of these companies is more concerned with other factors that account for variations in ROA than working capital. Finally, the results show that the current ratio has a positive insignificant effect, implying that a unit increase in the current ratio leads to a 99.52 percent increase in ROA, implying that the current ratio is only sufficient to cover liabilities and not to finance day-to-day operations that may lead to profitability. The panel's overall R2 is 16 percent. At a 1% level of significance, this model is

significant. F-statistics and Wald chi-squares are interchangeable terms. The F-statistics were found to be significant at 1%, indicating that profitability, as assessed by ROA and working capital management proxies, is consistent with the model. The regression equation's function is shown below.

$$ROA_{i,t} = 5.525 + (0.0040) CCC_{i,t} + (-0.0291) ACP_{i,t} + (11.91567) WCR_{i,t} + (0.99521) CR_{i,t} + e_{i,t}$$

Test of Hypotheses

H₀₁: The CCC has no significant effect on the ROA of listed consumers and industrial goods sectors in Nigeria.

The CCC of Nigeria's publicly traded consumer and industrial products companies has a z-value of 1.18 and a coefficient of 0.0040, with a statistically insignificant p-value of 0.238. This finding indicates that the cash conversion circle of Nigerian consumer and industrial products companies is insignificant in explaining and predicting their return on assets over the study period. With a positive coefficient, it means that if these organizations' management efficiently manages their various cash conversion circles, their return on assets will grow. The findings of Oladimeji and Adejebi (2020), Owolabi and Alu (2012), who found that CCC has no significant effect on profitability, are consistent with those of Iyewumi et al (2015), Angahar and Alematu (2014), Owolabi and Obida (2012), Onojie (2014), and Kajola et al (2014), who found that CCC has a significant effect on profitability. According to the findings of this study, CCC is not a powerful explanatory variable in determining the financial performance of listed consumer and industrial goods companies in Nigeria, so the null hypothesis, "Cash conversion circle has no significant effect on the profitability of listed consumer and industrial goods companies in Nigeria," can be accepted.

H₀₂: Inventory conversion period (ICP) has no significant effect on return on assets of listed consumer and industrial goods sector in Nigeria.

The model's random effect regression result reveals that the inventory collecting period has a z-value of -3.03 and a coefficient value of -0.02910 with a significant value of 0.002 as displayed in table1. This result indicates that the inventory conversion phase has a considerable negative impact on these companies' return on assets during the study period. Because the coefficient has a negative sign, it means that every unit increase in ICP leads to a reduction in profitability. As a result, management should guarantee that ICP is effectively managed and does not surpass what it is now.

Iyewumi et al (2015), Sabo et al (2015), Onodje (2014), Owolabi and Alu (2012), and Uremadu et al (2012) all came to similar conclusions (2012) In contrast to the findings of Oladimeji and Aladejebi (2020) and Angahar and Alematu (2014), who found that ICP does not affect profitability, Oladimeji and Aladejebi (2020) and Angahar and Alematu (2014) found that ICP does not influence profitability. At a 1% level of significance, ICP was determined to have negative significance in this investigation. This means that the lower the ROA, the more inventory is held for a lengthy time. As a result, the variable is found to be significantly related to the profitability of publicly traded consumer and industrial goods companies in Nigeria over the study period. As a result, the findings support rejecting the study's second null hypothesis, which claims that the inventory period has no substantial impact on the return on assets of the consumer and industrial products sectors in Nigeria.

H₀₃: Ratio of working capital to revenue (WCR) has no significant effect on the return on assets of listed consumer and industrial good companies in Nigeria.

The findings show that the ratio of working capital to sales has a substantial impact on the profitability of Nigerian consumer and industrial goods enterprises. The coefficient of WCR is 11.91567 with a z-value of 2.45 and a p-value of 0.014, which is statistically significant at the five percent significance level, evidenced in table 2 above. The coefficient value indicates that an increase in WCR will have a considerable positive impact on ROA. This finding demonstrates that WCR is strongly linked to ROA and has a significant impact on the profitability of Nigerian consumer and industrial goods companies.

This result supports rejecting the study's third null hypothesis, which claims that the ratio of working capital to revenue has no meaningful impact on the return on assets of publicly traded consumer and industrial goods companies in Nigeria.

H₀₄: Current ratio has no significant effect on the return on assets of listed consumers and the industrial goods sector in Nigeria.

The z-value for the current ratio is 1.01 as reflected in table 2, with a coefficient of 0.9952 and a p-value of 0.312, as shown in table three, indicating an inconsequential result. This means that the current ratio has little impact on the profitability of Nigerian consumer and industrial goods enterprises. The coefficient indicates that the current ratio is positive but negligible, implying that the enterprises are not effectively employing their current assets in a way that will have a major impact on asset returns.

As a result, any increase in the current ratio will maintain investor confidence, but efficient use is required to increase returns. In contrast to Sabo et al (2015), Onodje (2014), and Ogundipe et al. (2012), who reported a substantial effect of the Current ratio on performance, this conclusion is consistent with Owolabi and Alu (2012). The current ratio was shown to be statistically positive and insignificant in determining the profitability of publicly traded consumer and industrial products companies in Nigeria in this study. This conclusion provides sufficient evidence to accept the study's fourth null hypothesis, which argues that the current ratio has no substantial impact on the return on assets of listed consumer and industrial goods companies in Nigeria.

5. Conclusion and Recommendation

Following the methodological examination of this research, findings, and discussion, the study concludes that the cash conversion cycle has a positive but modest impact on the profitability of listed consumer and industrial goods companies in Nigeria. This suggests that the cash conversion cycle plays a little role in explaining variances in the ROA of Nigeria's publicly traded consumer and industrial products industries. The inventory conversion period has a negative and large impact on the profitability of Nigeria's publicly traded consumer and industrial products companies, implying that the inventory conversion period has a heavy outturn on profits. As a result, a unit increase/decrease in inventory days have a considerable impact on these organizations' profitability.

Furthermore, the working capital to revenue ratio has a favorable and considerable impact on the profitability of the companies studied. This means that the more working capital available for operations, the higher the company's profitability, and that the current ratio has a negligible impact on the profitability of listed consumer and industrial goods firms in Nigeria.

This means that having adequate current assets to cover liabilities does not always imply increased profitability.

The study suggests that consumer and industrial goods companies reconsider their collection policies. As a result, they should look into the inventory conversion period for goods to boost company performance. Consumer and industrial products companies should embrace as many smart working capital policies and methods as feasible to improve their working capital structure, as well as their profitability. Managers should provide working capital management with the utmost attention and consideration because it is a concern for today's firms.

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