Innovations

Working Capital Management and Enterprise Value Added Empirical Evidence from Listed Non-Financial Firms in Nigeria

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Abstract

Based on working capital management theory framework, this study x-rays the link between cash conversion cycle and firm performance. Particularly, this aim of this study is to explore a critical tool of working capital management by examining a sample of seventy-two (72) listed non-financial firms in Nigeria over a ten (10) year period ranging from 2010 to 2019. Working capital management measure considered in this study is the cash conversion cycle which also is the independent variable while firm performance (dependent variable) is proxied as Enterprise Value Added. In this study, robust standard error regression analyses technique was employed to analyze the panel data set collated from annual financials of the sampled non-financial listed firms. The finding indicates that lengthening cash conversion cycle indeed does hinder firm performance in the context of enterprise value addition. This finding is consistent with the views of working capital management theory which suggest that managers must acquit themselves with happenings in the control of inventories, receivables and payables since they all affect cash positions. Therefore, the researcher recommend that managers should improve their companies' value performance by shortening cash conversion cycle period since such actions will improve cash flow position which should go a long way to benefit financial managers daily activities of the organization.

Keywords: 1.*Cash Conversion Cycle, 2.Enterprise Value Added, 3.Non-Financial Listed Companies, 4.Robust Standard Error Regression*

1 Introduction

Working capital management difficulties have continued to rise worldwide, owing to the importance of determining the best path for a successful firm. Working capital management is critical (Enqvist et al. 2014) during economic downturns because it serves as a liquidity cushion (Baos-Caballero et al., 2020). According to a report by Price Waterhouse Coopers (PWC) analysis on globally listed firms revealed that optimizing working capital could free up much more than €1.3 trillion in cash, potentially increasing capital investment by 55%. (PWC Annual Report 2019). Further, the report notes that year 2014 up until 2019 have highlighted new issues for listed companies' financial performance, including: capital expenditure drops and expensive cash conversion procedure with negligible improvement in working capital. Therefore, it is in this context that business organizations must have a strong working capital culture to promote firm performance.

Working capital management is important in financial decisions since it influences a firm's profitability, risk, and market value (Sugathadasa, 2018). According to Yilmaza and Acar (2019), the primary issue in working capital management is the trade-off between liquidity and profitability, which is consistent with Smith's (1980) findings that working capital management influences company profitability and risk, and hence its value. Because it entails strong trade-offs between risks and profits connected with short-term asset and liability management, liquidity management is regarded as one of the most important financial management strategies. It's no surprise that Olaoye, Adekanbi, and Oluwadare (2019) believe that liquidity and profitability are two sides of the same coin because they operate in different directions. This suggest that boosting firm's liquidity reduces profitability and vice versa.

However, (Wassie, 2020) stated that managing working capital components, particularly the cash conversion cycle, is critical in order to achieve the desired profit level and keep the business running because firms' profitability may suffer if the costs of working capital investment rise faster than the benefits of granting more trade credit to customers or holding more inventories (Gill, Biger & Neil 2010; Ikpefan & Enahoro 2007; Ehiremmen, 2017). A profitable cash conversion cycle necessitates that companies often examine the appropriate number of days it will take them to convert sales to cash, as this interval may affect such organizations' profitability in terms of return on asset (Ebben & Johnson, 2011). As a result, effective working capital management in terms of the optimal cash conversion period becomes an essential component of the overall corporate strategy for increasing shareholder wealth (Kumaraswamy, 2016).

In a similar vein, Dong and Su (2010) believe that even if a company loses money in different accounting periods, it cannot continue to function for long with inefficient cash conversion cycle management. this leads to the understanding that the apparent poor performance of Nigerian enterprises may be linked to an inability to manage their working capital effectively and efficiently. In the views of Ehiremmen, (2017) firm managers engage in different vices that affect the management of short-term assets and obligations, resulting in a failure to achieve the desired profit. This shows that corporate organizations in Nigeria have, over time, failed to grasp the nuances of managing their short-term investments, resulting in either excess or insufficient working capital emphasizing that poor cash conversion cycle management has a major impact on operational activities, which in turn has an impact on profitability.

Notably, the researcher believes that there hasn't been much studies conducted in recent times on the relationship between cash conversion cycle management and the success of listed organizations in Nigeria. Much more, current studies have provided disaggregated findings, providing a foundation for future research. While the findings of Wongthatsanekorn (2010), Ikechukwu and dan Nwakaego (2016), and Dhole, Mishara, and Pal (2019) on the effect of cash conversion cycle management on firm

performance were negative, the findings of Juwita and Meiryani (2021), Falope, and Ajilore (2009), Murtala Zakari, and Sani Saidu (2016) were seen to be favourable. Further, it is revealed that related studies have adequately employed accounting financial ratios of Return on Asset and Return on Equity as proxies for firm performance (Andow & David 2016; Owolabi & Alu 2012; Oseifuah, & Gyekye 2016), thereby deemphasizing long-term performance measures that signal shareholders' wealth performance as captured in Economic Value Added (EVA).

EVA is a measure of a company's financial success based on residual wealth that emphasizes shareholder value maximization over net profit maximization. EVA performance knowledge has grown in importance because it is utilized as a measure of how profitable a firm's projects are, and thus serves as a reflection of management performance. Most importantly, this study is motivated by the recent economic prognosis. Inflationary trends have been discovered to skyrocket over the studied period (2010 to 2019), leading to an increase in interest rates, which affects business cost of capital so that managers may need to focus on areas under their control, such as working capital, in the face of this threat.

Against this backdrop, this study aims to contribute to the existing related literature by examining the relationship between cash conversion cycle and firm performance in Nigeria using panel data. This study is relevant because it provides critical empirical information at a time when the Nigerian economy is reeling from the effects of an economic recession, which has impacted operational activities of enterprises listed on the Nigerian Stock Exchange.

The rest of the paper is separated into four sections. Section 2 emphasizes the literature and empirical evaluation of essential concepts; Section 3 focuses on study technique; Section 4 relays and discusses the analysis results; and Section 5 summarizes and draws to conclusion the entire study.

2. Literature Review

Conceptual Review

Cash Conversion Cycle

The time gap between cash disbursement and cash collection is known as the cash conversion cycle. According to Angahar and Alematu (2014), the cash conversion cycle is a way for calculating the time it will take between payment and cash collection. It includes the number of days it takes for cash to be received following sales, calculated from the time the firm eventually makes payment for items. In a similar view Institute of Chartered Accountants of Nigeria (ICAN, 2014) defines the cycle as the average time between receiving money from creditors in exchange for inventory and services given and receiving cash from customers for reselling the goods or services. Its primary components are the average length of time that inventory is held before being utilized or sold; the average credit period taken from creditors; and the average length of credit time taken by (or provided to) account receivables. Mohamed, (2013) documents that the traditional link between the cash conversion cycle and company performance necessitates decreasing the cash conversion cycle length to boost firm profitability.

The phrase "Financial Performance" does not have a precise definition. A financial analyst can evaluate performance in terms of profitability and growth which will be quite different from the views of an economist (Olaoye, Olaoye, & Adebayo 2019. However, financial performance evaluates a firm's achievement of its economic goals, which are related to numerous subjective measures of how well a firm can use its supplied assets from its principal method of operation to generate profit (Joshua, Efiong & Imong 2019). Going by the opinion of Odusanya, Yinusa, and Ilo (2018), organizations with strong

financial performance create value, hire people, are more inventive, socially responsible, and benefit the entire economy through taxation, income generation, and overall economic development. Corporate financial performance, in particular, is difficult to quantify as a performance mechanism. Existing techniques essentially differ in whether they rely on the firm's financial prosperity or market performance. Financial prosperity refers to a company's overall efficiency and performance as measured by its financial performance, which can be stated using various methodologies and measures. Most related research, including those of Osuji and Odita (2012), Uwalomwa and Uadile (2012), and Frezewd (2016), choose Return on Assets as an accounting performance proxy and Tobin Q and Enterprise Value Added as market performance comparisons as indicators of financial performance. As a result, this study used the enterprise Value Added metric of market performance as a measure of firm performance.

Cash Conversion Cycle and Firm Performance

Depending on the operations of a company different working capital needs will be required. Managers must keep an eye on the company's current assets and liabilities to determine the appropriate level of working capital investment. This strategy is designed to maximize the profitability of investments in terms of revenue generation while decreasing the amount of leverage required to expand sales or production. (Muharram, 2018). Cash inflows from sales of items are converted into cash outflows for raw material purchases, which is referred to as the "cash conversion cycle" since it is handled by the corporation over time. Cash conversion cycle is a metric of working capital management that measures the time it takes for a company's funding to supply raw materials to the sale of completed items. Good working capital management aims to reduce the time it takes to move money from one account to another to meet the needs of the firm. The longer the cash conversion period, the less efficient the company's working capital management since it demonstrates that the company's operations are slow and ineffective. A long cash conversion cycle can have a negative impact on performance and profitability (Kademi, 2017). According to Pakdel and Ashrafi's (2019) a shorter cash conversion cycle will lead to an increase in the company's performance, whereas a longer cash conversion cycle does not lead to an improvement in firm's performance. Nilawati (2011) show that utilizing the cash conversion cycle to gauge working capital management has a significant negative impact on corporate performance measured in terms of Tobin's Q. For a given set of factors or scenarios, a linear or non-linear, positive or negative relationship between working capital management and corporate performance can be seen; in some cases, there is no correlation at all.

Theoretical Framework

Theory of Working Capital Management

The foundation for working capital management research is Sagan's (1955) theory of working capital management, which acts as the anchor hypothesis for this study. Working capital management is emphasized in the theory, and it can have a substantial impact on a company's success. Sagan posit that financial managers' functions are primarily concerned with monies earned in their daily commercial transactions. In this situation, managers must deal with events in inventory, receivables, and payables control because all these accounts affect cash positions. As a result, Sagan agreed that managing accounts receivable, payable, inventories, and cash is critical to the smooth operation of any business (Ibrahim & Abdullah, 2016)

Empirical Review

"The impact of working capital management on business profitability and firm values" was the focus of a study done in Sri Lanka by Amarasekara, Rathnayake, and Pathirawasam (2021). 205 firm-year observations from 41 enterprises listed on the Colombo Stock Exchange between 2014 and 2017 were analyzed using panel data regression analysis. Working capital financing policies revealed a negative influence on return on assets due to the cash conversion cycle, days of accounts payable, and working capital financing policies. The study also find that return on assets is strongly influenced by the amount of accounts receivable.

It was observed that working capital management affects profitability of Indonesian listed firms from a study conducted by Basyith, Djazuli, and Fauzi (2021). In compiling the data, the authors employed 135 publicly traded companies from a variety of industries, including agricultural, pharmaceutical, telecommunications, investment and retail as well as the cement and metal industries. Elements of working capital taken into consideration during the research include working capital investment and financing strategies as well as the cash conversion cycle. Ordinary least squares regression, results show that working capital investment strategy has a significant positive impact on return on assets, but that working capital financing strategy has no significant impact. Further, the study revealed that there is no correlation between working capital investment and gross profit margin but working capital financing has a significant negative effect on capital employed.

The study "Impact of Working Capital Policy on Firm Performance" was conducted by Nadeem, Waris, Asadullah, and Kamran (2020) using data from Pakistan. The investigation which employed Ordinary Least Square Regression analysis technique shows that return on equity is significantly related with all components of working capital, while account payable is positively associated with company performance. Account payable has a significant positive relationship with Tobin-Q

Prempeh and Peprah-Amankona, (2020) investigated if working capital management have an impact on profitability of Ghanaian manufacturers. Eleven (11) manufacturing companies listed on the Ghana Stock Exchange for the period between 2011 and 2017 were considered in the research. Dynamic panel regression (Arellano-Bond Estimation) technique was used to investigate the relationship which showed that working capital management has a significant positive correlation with profitability.

Oladimeji and Aladejebi (2020) employed Selected Small Businesses in Nigeria to evaluate the impact of working capital management on profitability. Quantitative research method was adopted using relevant secondary data from annual financial reports of the selected SMEs. Ordinary least square regression analysis was used to determine if working capital indicators are significant predictor of SMEs' profitability. The finding shows that for the period 2014 to 2018, there is no significant relationship between working capital management and SME's profitability.

Dabo, Andow, and Peter (2020) examined working capital management and firm profitability of Nigerian manufacturing companies. As proxies for working capital, accounts receivable, accounts payable, and the cash conversion cycle were utilized as independent variables, while debt ratio and sales growth were employed as control factors. Return on assets was used as proxy for profitability in the study. The findings reveal that accounts receivable has no significant impact on profitability of manufacturing enterprises in Nigeria, for twenty-five manufacturing firms during the period 2007 to 2017.

Olaoye, Adekanbi and Oluwadare, (2019) in their study relating to working capital management and firms' profitability of Nigerian firms undertook a panel data analysis together with other different regression estimators to analyze the relationship. The study is based on a balanced panel of 10 listed firms for the period between 2008-2017. Findings show that cash payment period exerted a negative

impact on return on assets, while cash collection period show no significant impact on profitability. Also discovered is that inventory period shows insignificant impact on profitability.

Ogundipe, Idowu and Ogundipe (2012) studied working capital management, firms' performance and market valuation in Nigeria. A sample of fifty-four non-financial firms listed on the Nigeria Exchange Group were selected for the period 1995 – 2009. The data employed for the study were sourced from annual financial reports of the sampled firms. Regression analysis technique was used to carry out the analysis which revealed a significant negative relationship between cash conversion cycle, market valuation and firms' performance in Nigeria.

3 Methodology

In this study, *ex-post facto* research design is employed. The population of this study is made up of non-financial companies listed on the floor of the Nigerian Exchange Group for the period between 2010 and 2019. As of 31st December 2019, the total number of listed non-financial companies was one hundred and six (106). However, to obtain the sample, this study focused on companies that joined the stock exchange before year 2010 and remained on the exchange till year 2019. To this end, the sample of this study consist of seventy-five non-financial companies. In examining the relationship between cash conversion cycle and firm performance in Nigeria, the study adopted Robust Least Square Regression analysis technique and included the variables of firm size and firm age as control variables to account for differences in sizes and ages of the firms. According to previous studies, firm size influences working capital management and firm profitability (Garcia-Teruel & Martinez-Solano, 2007; Mathuva, 2010). Firm age has been regarded as an important variable which explains changes in working capital level against profitability (Howorth & Westhead 2003; Mathuva, 2010). They argue that older firms have better access to external financing than do younger ones, so older firms are less constrained in financing their working capital hence find a positive relationship between firm age and firm performance. In this study, the econometric model of Ben Le (2019) is adopted, and modified to suit the purpose of this study thus presented below as:

Working Capital Firm Performance Nexus Model

$$\mathbf{EVA_{it} = \beta_0 + \beta_1 FCCCit + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + + e_{it}}$$

Where:

EVA = Enterprise Value Added
FCCC = Firm Cash Conversion Cycle
FIRMS = Firm Size
FIRMA = Firm Age
"i" = Cross Section (Sample Companies)
"t" = Time Frame (2010 to 2019)
e_{it} = Stochastic error Term

4. Result and Discussion

We begin by conducting basic pre-regression analysis: descriptive statistics which provide information about the nature of the data gathered from the sampled firms.

Table 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fccc	741	-126.9483	2540.995	-51443.24	20401.14
eva	741	6.575977	70.72695	-1304.13	445.451
firms	741	7.084738	.8219	5.0927	9.2409
firma	750	25.988	13.42033	1	55

Authors Computation

The results demonstrate that, on average, the performance level in terms of enterprise value added is positive (6.576), indicating that the managers performed well during the time period under review. Further, it is worth noting that all the studied firms in this study achieved peak performance levels of around (445.451) in 2011 compared to 75.03 in 2019. The descriptive statistics results show that the average cash conversion cycle period is quite short (-126.9483), implying that managers may have performed optimally in the process of converting cash. This is highly desirable and noteworthy, as reduced conversion times result in improved performance (Ben Le, 2019). However, descriptive statistics revealed that the selected firms' average age is 26 years, and their average size is 7.08 over the time period under consideration. The results obtained from analyzing the normality of the data is shown in Table 2.

Table 2 Data Normality Analysis

Variable	Obs	W	V	z	Prob>z
eva	741	0.30759	332.486	14.201	0.00000
fccc	741	0.10537	429.593	14.828	0.00000
firms	741	0.98856	5.491	4.165	0.00002
firma	750	0.93455	31.776	8.463	0.00000

Authors' Computation

All variables of interest, as well as the control variables, do not follow a normal distribution (are not normally distributed), as all their P-values are statistically significant at 1%. As a result, we rely on the likelihood of the t-statistics distribution to interpret the regression analyses (Mendes & Pala 2003; Keskin 2006; Jarque & Bera 1987)

Table 4.2 Robust Least Square Regression Estimates

Variables	***Cash Conversion Cycle***	***Firm Size***	***Firm Age***	***Constant***	
Firm Performance Model					
Coefficient ***t_ Statistics*** ***Probability_t***	*-0.002* *(-10.89)* *{0.0000)****	*1.630* *(6.06)* *{0.000)****	*0.062* *(3.78)* *{0.000)****	*-4.437* *(-2.31)* *{0.021)*	
No. of Obs = 739 ***F(3, 735) = 55.23*** ***Probability F = 0.0000***					

Where: *** represents 1% level of significance

Authors' Computation

The findings of the robust least square regression analysis employed to investigate the likely effect of cash conversion cycle on company performance in Nigeria are shown in table 3. The model goodness of fit represented by the F statistics (55.23) with a matching probability value of 0.0000 indicates that the entire model is best fit and can be used to suggest policies. The result reveal that the impact of working capital management on enterprise value added is negative and statistically significant. This information suggests that managers of non-financial firms listed on the Nigerian Exchange Group were unsuccessful in managing cash conversion hence extending the period of cash conversion diminish shareholder value during the investigation period. In other words, the market rewards companies that manage their working capital effectively. This finding is consistent with those of Sharma and Kumar (2011); Enqvist, Graham, and Nikkinen (2014); Ukaegbu (2014); Wuryani (2015); Yazdanfar and hman (2014); Hingurala Arachchi, Perera & Vijayakumaran, (2017); Ben Le, (2019) and Puriboriboon, (2021), who find that an excessively long cash conversion period invariably results in unprofitable use of the firm's resources. The finding is also in line with those of Pirttilä, Virolainen, Lind, and Kärri (2019) and Tuffour and Boateng, (2017). However, possible explanations for positive outcome is that shorter cash conversion cycle indicates shorter average collection time, higher inventory turnover, and a longer supplier credit period, resulting in lower volumes of funds being blocked in working capital channels and a lower need for working capital finance. The use of working capital funding is minimized, resulting in less cash outflow in financing charges. As a result, the cost of working capital maintenance is lowered, resulting in higher margins, higher margins, and higher firm value. Nonetheless, the findings of this study differ from those of Abuzayed (2012) and Afrifa and Padachi (2016).

5 Conclusion and Recommendation

The author validated the effect of cash conversion cycle on firm performance in the context of enterprise value added for non-financial companies listed on the Nigerian Exchange Group for the period between 2010 and 2019. The finding revealed that reducing cash conversion cycle period will have a significant impact on firm value. As a result of the empirical findings, it is recommended that firm managers will be able to increase the value of their companies by shortening the cash conversion cycle. This will enable financial managers have more finances to conduct organization's daily operations. Further, financial managers must implement various strategies to increase account receivable collection period and discounts, as well as strike a balance between necessary solvency and maximum delay in paying trade debtors and suppliers. When this is done, shareholders' value is maximized, and the company avoids financial distress.

Suggestions for Future Studies

The researcher does acknowledge that there are several other available proxies which may have yielded different outcomes. Hence, future studies could use other measures such as TobinQ, Market Share Price and Return on Equity to measure profitability, and later a comparative analysis of which proxy gives a better result for the firms under study. More than these, future studies may also consider the nonlinear relationship that may exist between cash conversion cycle and firm performance.

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