EFFECT OF CASH MANAGEMENT ON PROFITABILITY OF NIGERIAN MANUFACTURING FIRMS

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Abstract

The success of any business venture is predicated on how the management has planned and controlled its cash flows. Cash shortage will disrupts the firm's smooth operation and can even lead to insolvency. Excessive cash will tie down unnecessarily long-term capital with a result that the return on capital employed will be low. Thus, cash management assumes more significance than other current assets because cash is the most important asset that a firm holds. However, literature revealed that only limited studies have investigated the relationship between cash management and profitability in Nigeria. Therefore, this study examined the relationship between cash management and profitability in the Nigerian manufacturing firms. Correlation and regression analysis were carried out. The results reveal a positive and significant relationship between CCC and ROE on one hand and a non significant negative relationship between CCC and ROA. From the results of the study, it is recommended that future researchers should expand the scope of their studies to include multiple sectors of the economy.

Key words: Liquidity, Cash Management, Profitability, Manufacturing, Current Assets.
JEL Classification: G30, G32

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Introduction

Cash management is essential to every business that desires to meet up with its short-term financial obligations. Akinsulire (2003) asserts that the success of any business venture is predicated on how the management has planned and controlled its cash flows. According to Olowe (2008), cash management is concerned with the efficient management of cash so as to achieve an optimum level of cash in the firm's working capital. Cash represents the basic input necessary to start and keep a business running. A company needs to maintain sufficient cash to keep its business running smoothly. Cash shortage will disrupts the firm's operation and can even lead to insolvency. Excessive cash will tie down unnecessarily long-term capital with a result that the return on capital employed will be low. A firm thus needs to maintain sound cash position.

Statement of the problem

Cash management represents an important component of working capital management (Akinyomi & Tasie, 2011; Malik, Waseem & Kifayat, 2011). Literature revealed that several studies on working capital management have been conducted both in the advanced market economies and developing economies (Wongthatsanekorn, 2010; Abbasi & Bosra, 2012). These studies have reported the relationship between working capital management and financial performance (Hutchison, Farris II and Anders, 2007; Akinyomi & Tasie, 2011). However, till date, only limited studies have investigated the relationship between cash management and financial performance especially in the context of developing economies (Raheman & Nasr, 2007). Peavler (2009) observed that most failed businesses (up to sixty percent) were of the opinion that all or most of their failures were due to cash flow problems. Thus the relationship that exists between cash management and profitability in Nigeria remains unresolved and called for investigation.

Objective of the study

Sequel to the problem identified above, the objective of this study is to examine the relationship between cash management and profitability of Nigerian manufacturing firms. The specific objectives of the study include to:

(i) Examine the relationship between cash management and return on assets of Nigerian manufacturing firms.

(ii) Investigate the relationship between cash management and return on equity in Nigerian manufacturing firms.

Research question

In order to achieve the objective of this study, the following research question has been posed:

(i) What is the relationship between cash management and return on assets of Nigerian manufacturing firms?

(ii) What is the relationship between cash management and return on equity in Nigerian manufacturing firms?

Research hypothesis

In order to investigate the nature of relationship that exists between cash management and profitability, the following hypothesis has been formulated:

Ho_i: There is no significant relationship between cash management and return on assets in Nigerian manufacturing firms.

Hoi_{ii}: There is no significant relationship between cash management and return on equity in Nigerian manufacturing firms.

Literature review

Cash management is the practice of planning and controlling cash flows into and out of the business, cash flows within the business, and cash balances held by a business at a point in time (Pandey, 2004). Efficient cash management involves the determination of the most favourable cash to hold by considering the trade-off between the opportunity cost of holding too much cash and the trading cost of holding too little (Ross et al., 2008 cited in Nyabwanga, et al., 2011). Cash management is fundamental to every business that desires to meet up with its short-term financial obligations. Cash management consists of taking the necessary actions to maintain adequate levels of cash to meet operational and capital requirements and to obtain the maximum yield on short-term investments. Uwuigbe, Uwalomwa and Egbide (2011) observed that cash management assumes more significance than other current assets because cash is the most

important asset that a firm holds. Cash, unlike fixed assets or inventories does not produce goods for resale, notwithstanding management's considerable time is devoted to managing cash.

The importance of managing cash to a manufacturing organization as recognized by Alfred (2007) includes the following: a) Management of cash aids the achievement of liquidity and control. b) It brings about proper planning with regard to cash disbursement and receipts over cash positions to keep the firm sufficiently liquid and to use excess cash in some profitable venture c) The management of cash is also significant since we cannot rightly predict accurately cash flow behaviour in the future. d) Through cash management, appropriate strategies are developed thereby providing innovation for cash receipts and payments. e) It also aid maintaining adequate control over cash position to keep the firm sufficiently liquid and to use excess of cash in some profitable ventures.

Bhutto, Abbas, Rehman and Shah, (2011) conducted an investigation on the relationship between cash conversion cycle with firm size, working capital approaches and firm's profitability in Pakistan. Secondary data were collected from the financial statements of 157 non-financial companies comprising on 12 industrial groups listed on the Karachi Stock Exchange, Pakistan for the year 2009. The firms with negative equity and profitability were excluded from the study. Data analysis was carried out using Pearson correlation and Analysis of Variance (ANOVA). The result revealed that length of cash conversion cycle has negative relationship with sales revenue, return on equity (ROE) and financing policies of the firms and has positive relationship with total assets, return on assets. Cash management is usually measured by cash conversion cycle (CCC) calculated by the number of days between actual cash expenditures on purchase of raw materials and actual cash receipts from the sale of products or services (Eljelly, 2004).

Uwuigbe, Uwalomwa and Egbide (2011) carried out an investigation on cash management and corporate profitability in some selected listed manufacturing firms in Nigeria. Cash conversion cycle was used as the measure for cash management. Meanwhile, current ratio, debt ratio and sales growth were used as control variables. The study utilized secondary data while Pearson's correlation and regression analysis were used in analyzing the data for a sample of 15 listed manufacturing companies in Nigeria between 2005-2009.The results of the empirical findings

showed that there is a strong negative relationship between cash conversion cycle and profitability of the firms. The study suggested that managers could create positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level and also accounts receivables should be kept at an optimal level.

Similarly, Falope and Ajilore (2009) used a sample of 50 Nigerian quoted nonfinancial firms for the period 1996 -2005. Their study utilized panel data econometrics in a pooled regression, where time-series and cross-sectional observations were combined and estimated. They found a significant negative relationship between net operating profitability and the average collection period, inventory turnover in days, average payment period and cash conversion cycle.

Eljelly (2004) carried out an empirical investigation on the relation between profitability and liquidity on a sample of joint stock companies in Saudi Arabia. Liquidity was measured by current ratio and cash gap (cash conversion cycle). Secondary data were obtained from the annual accounts of the selected companies. Using correlation and regression analysis the study found significant negative relation between the firm's profitability and its liquidity level, as measured by current ratio. This relationship was more evident in firms with high current ratios and longer cash conversion cycles. At the industry level, however, the study found that the cash conversion cycle or the cash gap was of more importance as a measure of liquidity than current ratio that affects profitability. The size variable was also found to have significant effect on profitability at the industry level.

Malik, Waseem and Kifayat (2011) carried out an investigation on working capital management and profitability in the textile industry of Pakistan. The population of the study was the textile industry of Pakistan. The study was based on secondary data collected from listed firms in Karachi stock exchange for the period of 2001-2006. The effect of working capital management on profitability was tested using panel data methodology. Data analysis was conducted using correlation and regression analysis. The results of the study revealed that there a strong positive relationship existed between profitability and cash, accounts receivable and, inventory while there a negative relationship was reported between profitability and accounts payable. In other words, increase in cash, inventory and credit sales will lead to increase profitability of firm.

Wongthatsanekorn (2010) conducted a study on the impact of cash-to-cash cycle time, inventory conversion period, receivable conversion period, and payable deferral period of private hospital in Thailand. Data for the study were obtained from the financial reports of listed private hospitals in Stock Exchange of Thailand across 13 private hospital populations, from 2002 to 2008. The results of the regression analysis revealed that s negative relationship existed between payable deferral period and asset turnover. Meanwhile, no significant relationship was reported between each of company size, sales growth, financial debt level, and annual gross domestic product growth.

Raheman and Nasr (2007) carried out a study on the effect of different variables of working capital management including average collection period, inventory turnover in days, average payment period, cash conversion cycle, and current ratio on the net operating profitability of Pakistani firms. Sample firms included ninety-four Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999-2004. From result of the regression analysis carried out, they reported that there was a negative relationship between variables of working capital management including the average collection period, inventory turnover in days, average collection period, cash conversion cycle and profitability. Besides, they also indicated that size of the firm, measured by natural logarithm of sales, and profitability had a positive relationship.

Ebben and Johnson (2011) investigated the relationship between cash conversion cycle and levels of liquidity, invested capital, and performance in small firms over time. In a sample of eight hundred and seventy-nine small U.S. manufacturing firms and eight hundred and thirty-three small U.S. retail firms, cash conversion cycle was found to be significantly related to all three of these aspects. Firms with more efficient cash conversion cycles were more liquid, required less debt and equity financing, and had higher returns. The results also indicated that small firm owners/managers may be reactive in managing cash conversion cycle. The study highlighted the significance of cash conversion cycle as a proactive management tool for small firm owners.

Abbasi and Bosra (2012) investigated the effect of the cash conversion cycle components on the operational gross profit to assets ratio in Tehran. Data for the study were obtained from one hundred and twelve annual reports of firms listed in the Tehran stock exchange for the period of 1998 to 2009. The relationship between cash conversion cycle components and 12 control variables tested using regression model. The result of first model tested demonstrated that when all of the cash conversion cycle components entered to the model, the net cash conversion cycle and the number of days inventory holding did not have significant effect but number of days receivable accounts and number of days payable accounts had significant negative effect on operational gross profit to assets ratio.

Materials and methods

The study employs the correlational research design. The population of the study comprises of the manufacturing firms listed in the Nigerian stock exchange. Data were obtained from the audited accounts of fifteen randomly selected manufacturing companies in the Nigerian stock exchange for 2008-2012 period; representing 75 firm-year. Return on assets (ROA) and return on equity (ROE) are the dependent variables. Meanwhile cash conversion cycle represents (CCC) the independent variable on the other hand; current ratio (CRatio), debt ratio (DRatio) and sales growth (SG) are control variables. Correlation and regression analysis were carried out in analyzing the data. The regression equations are as follows:

$ROE = b_0 + b_1CCC_t + b_2CRatio_t + b_3DRatio_t + b_4SG_t + \varepsilon$ ……..(1)

$ROA = b_0 + b_1CCC_t + b_2CRatio_t + b_3DRatio_t + b_4SG_t + \varepsilon$ ……..(2)

Analysis and Results

Table 1 below presents the correlations' results among the variables of the current study.

Table 1: Correlations

		ROE	CCC	CR	DR	SG	ROA
ROE	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	15					
CCC	Pearson Correlation	.988**	1				
	Sig. (2-tailed)	.000					

	N	15	15				
CR	Pearson Correlation	.301	.303	1			
	Sig. (2-tailed)	.275	.273				
	N	15	15	15			
DR	Pearson Correlation	.396	.386	.586*	1		
	Sig. (2-tailed)	.144	.155	.022			
	N	15	15	15	15		
SG	Pearson Correlation	-.104	-.223	-.213	-.206	1	
	Sig. (2-tailed)	.713	.423	.445	.461		
	N	15	15	15	15	15	
ROA	Pearson Correlation	-.431	-.470	.061	-.095	.306	1
	Sig. (2-tailed)	.109	.077	.830	.737	.267	
	N	15	15	15	15	15	15

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

The results in table 1 above reveal a positive and significant relationship between CCC and ROE, meanwhile, a moderate and negative relationship between CCC and ROA. Also, it indicates that the relationship between CCC and ROA is not significant ($p < .077$). The table also reports the relationships that exist among the other variables of this study.

Table 2 below presents the regression model summary for the relationship between cash conversion cycle and return on equity in the Nigerian manufacturing sector.

Table 2: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.988[a]	.977	.971	10.3418180	.977	155.538	3	11	.000	2.273

a. Predictors: (Constant), DR, CCC, CR b. Dependent Variable: ROE

Table 2 also confirms R value of .988 indicating a strong and positive relationship between cash conversion cycle and return on equity. The value of R^2 value of .977 indicates that 97.7% changes in ROE can be attributed to a unit change in CCC.

Table 3: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49905.845	3	16635.282	155.538	.000[a]
	Residual	1176.485	11	106.953		
	Total	51082.331	14			

a. Predictors: (Constant), DR, CCC, CR b. Dependent Variable: ROE

Table 3 above presents the analysis of variance of the current study. The result reveals that a significant relationship exists between CCC and ROE with a p value of .000. Similarly, table 4 below presents the regression model summary for the relationship between cash conversion cycle and return on equity in the Nigerian manufacturing sector.

Table 4: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.516[a]	.267	.067	.0594492	.267	1.333	3	11	.313	2.278

a. Predictors: (Constant), DR, CCC, CR b. Dependent Variable: ROA

Table 4 reveals R value of .516 indicating a moderate relationship between cash conversion cycle and return on assets. The value of .267 indicates that only 26.7% changes in ROA can be attributed to a unit change in CCC.

Table 5: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.014	3	.005	1.333	.313[a]
	Residual	.039	11	.004		
	Total	.053	14			

a. Predictors: (Constant), DR, CCC, CR b. Dependent Variable: ROA

The result reveals that the relationship that exists between CCC and ROA is not significant with a p value of .313.

Discussion of findings

The result of the first hypothesis of this study reveals a positive and significant relationship between cash conversion cycle and return on equity in the Nigerian manufacturing sector. This result aligns with the one reported by Bhutto et al., (2011) who found a positive relationship between cash conversion cycle and return on equity.

Furthermore, the result of the second hypothesis is in line with the result reported by Eljelly (2004), Falope and Ajilore (2009), Raheman and Nasr (2007) who each reported a negative relationship between cash conversion cycle and return on assets. However, the result contradicts the one reported by Bhutto et al., (2011) who found a positive relationship between cash conversion cycle and profitability. However, the result of the second hypothesis contradicts the findings of Malik et al., (2011) who found a positive and significant relationship between cash conversion cycle and return on assets.

Conclusion

This study examines the effects of cash management on profitability of Nigerian manufacturing firms. The results reveal a positive and significant relationship between cash conversion cycle and profitability when return on equity is used as a proxy for profitability. Furthermore, the study revealed a non significant negative relationship between cash conversion cycle and profitability when return on assets is used as a proxy for profitability.

Recommendations

This study examines the effects of cash management on profitability of Nigerian manufacturing firms. From the results of the data analysis discussed above, it is recommended that future researchers should expand the scope of their studies to include multiple sectors of the economy. This may cover manufacturing, financial and other non financial sectors of the nation's economy.

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