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WORKING CAPITAL MANAGEMENT AND FINANCIAL PERFORMANCE: EVIDENCE FROM MANUFACTURING COMPANIES IN NIGERIA

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ABSTRACT: *The study examines the impact of working capital management on financial performance of manufacturing companies in Nigeria. The study employed multiple regressions in analyzing the data sourced from the published financial statement of the firms under the study. A significant outcome of the study is that Average Payment Period and Average Collection Period impacts on both Earnings per share and Return on capital employed. The implication is that efficient management of working capital will improve the financial performance of the manufacturing firms, hence the study recommends that professionals should be hired by these firm to ensure proper management of stock to avoid stock out. Conclusively, the study has shown that good management of working capital will keep manufacturing firms a float.*

KEYWORDS: Average Collection Period, Average Payment Period, Earnings per share, Return on Capital Employed

INTRODUCTION

The growth of a business entity depends on a lot of factors and one of such is the ability of the firm to use its current or short-term assets to meets its short-term liabilities (Harries, 2005). Working capital management focuses on promoting satisfying liquidity, profitability and shareholders' value (Makori & Jagongo, 2003). Niresh (2012) opine that working capital management is a crucial element in determining the financial performance of an organization. He pended that it is a concept that ensures the ability of the firm to fund the difference between short-term assets and short-term liabilities. Working capital refers to management of current assets and current liabilities. Horne and Wachowite, (2000) asserts that working capital management is crucial in manufacturing firm since part of their major assets is composed of current assets, as directly affect the profitability and liquidity of firm (Rahemam & Nasr, 2007).

An improper management of component of working capital that is, account receivables, account payables, and inventories will result to the difficulties in firm's continued operation and however will also affect the market value of such firm (Ogundipe, Idowu & Ogundipe, 2012). Makori and Jagongo (2013) stated that working capital is regarded as the result of the time lag between the expenditure for the purchases of raw material and the collection for the sale of the finished goods. And its management can have a significant effect on both liquidity and profitability of the company (Shin, & Soenen, 1998, Soenen, 1993).Brigham (1980) asserts that liquidity is the ease with which a company can turn its current assets into cash. Liquidity is an offshoot of working capital because cash is a component of current assets. Horne (2010) opined that linear relationship subsists between liquidity and profitability in line with the performance of the firm especially when the manufacturing outfit has to make frequent and timely disbursement to the various stakeholders.

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The management of working capital affects the financial performance of a firm especially the manufacturing firms. This is because working capital shows the strength and degree of solvency of the business. The ratio shows the extent to which the claim of creditors can be quickly meet. A low ratio indicates that two much capital is tied up in stocks.

Free cash flow is a key influence of shareholders value hence, companies particularly in the current difficult economic times are targeting working capital in order to lock cash invested in the business and invest in areas of higher value added returns (Mukhopadhyay, 2004). In as much as profit maximization is the aim of every business, maintaining liquidity of the firm also is crucial. Increasing profit at the cost of liquidity can bring serious problems to firm, hence, a firm must adopt a strategy where a balance will be maintained between these two objectives, and this is of course a challenge in working capital management (Smith, 1980, Reheman & Nasr, 2007). Working capital management is one of the most important areas while making liquidity and profitability comparisons among firms (ELjelly, 2014).

The theory of risks and return has it that investment with more risk will result to more return. Hence firms with high liquidity of working capital may have low risks and low profitability. Conversely a firm that has low liquidity of working capital faces high risk which results to high profitability.In Nigeria, manufacturing companies play a significant role in the economy as it employs not less than 80% of the labour force of the country and as such whatever affects the manufacturing companies automatically affects the economy.

Despite the crucial nature of working capital management, many promising and viable investment with high rate of return had turned out to be failures and went down (Salandeen, 2001). In Nigeria, many factories have been short down owing to wrong working capital management. Kastina steel rolling mill co. ltd, Niger sugar Company Bacita, Golden Guinea Breweries Umuahia, Aba textile Mills ltd Aba all went down and led to untimely and unplanned disengagement of many Nigerian workers and put them in the unemployment market. Inadition, The Ajakuta steel complex reduced its work strength from 5000 to 1000 in the year 2007 and few firms in business cannot pay dividend to their equity holders and are still in shamble despite their inability to pay and still they are quoted on the floors of Nigerian stock exchange market. Of recent, some companies were acquired by others because of inability to stand alone. For instance, Savannah sugar company ltd has been acquired by Dangote industries limited in 2002. It must be noted that these manufacturing companies play a crucial role in the economy as they employ not less than 80 percent of the country's total working population.

It is based on the problems identified above that this study is designed to find out the impact of working capital management on financial performance of manufacturing companies in Nigeria with these specific objectives:(1) To ascertain the impact of working capital management on Earnings per share of manufacturing companies in Nigeria and (2) To investigate the impact of working capital management on Return on Capital Employed.

LITERATURE REVIEW

The success of a firm is a function of its ability to generate cash receipts in excess of cash disbursements. But poor financial management and of course inadequate plan for cash requirement accelerates problem in organizations. Suffice to say that increasing profit at the cost of liquidity of the firm brings a serious problem; hence serious plan must be in place for effective attainment of the organizational objectives, that why working capital management has become an imperative issue especially in organization where financial managers find it difficult to identify the major drivers of working capital. Lamberson (1990) opines that the central objective of working capital is to ensure that the optimal level of cash and marketable securities or

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other non-financial inventories and account receivables are determined with a view to maximizing the total market value of the company.

CONCEPT OF WORKING CAPITAL

-Working capital cycle:
This is the circulating or operating capital of the business regularly and routinely turned over many times in a year in the course of generating income for the firm (Ibenta, 2005). This implies the duration between the outlay of cash for raw materials and the inflow of cash from the saleof the goods. Put differently, it is the average time that raw materials remain in stock less the period of credit taken from suppliers plus the time taken for producing the goods, plus the time taken by customers to pay for the goods.

Gross Working Capital:
This is concern with firm's investment in current assets. Current assets here refers to assets that can be easily converted to cash within an accounting period and this involves cash, short-term securities debts ie accounts receivables or book debt, stock (inventory) and bills receivables.

Net Working Capital:
This has to do with the current assets and current liability differences. Current liabilities are those claims of outsider which are expected to mature for payment within an accounting period. Thus accounts payables, outstanding expenses. If current assets exceeds current liabilities, a positive net working capital has occurred and vice-versa. Current assets management is concerned with two aspects that is (a) Optimization of investment in current assets and (b) how to finance current assets (Pandy, 2005).He further opines that investment in current assets should just be made adequate to meet the needs of the firm instead of excessive, stating that excessive investment in current assets impairs the firm's profitability as idle investment earns nothing. Pandy (2005) also stated that inadequate amount of working capital can threaten solvency of the firm because of its inability to meets its current obligation as they fall due.

THEORETICAL FRAMEWORKING

-Operating cycle theory: As one of the theories of working capital management, the operating cycle considers the receivables and inventories relating to working capital and usually, it commences with receipts of raw- materials to collection of receivables from debtors of the stock sales produced from those materials. This theory suggest that granting more credit terms to customer will lead to higher tendency of having a bigger but less liquid investment in cycle (inventory turnover).
-Resource Based theory: This theory is of the opinion that survival and growth of a firm depends on either the human or material resources of the firm. Resources means the inputs that are pushed into production process and are considered as fundamental unit of analysis and such include brand name, human skill, capital equipment, patent, finance etc.

EMPIRICAL REVIEW

In 2013, Daniel and Ambrose Investigated working capital management and firm profitability. Empirical Evidence from manufacturing and construction firms listed on Nairobi securities Exchange, Kenya. The challenge of the study was to find out the relationship between working capital management and profitability. The study employed a balanced panel data of five manufacturing and construction firms each which are listed on the Nairobi securities exchange (NSE). Pearson's correlation and ordinary least squares regression models were used. The study covers a period of 10 years that is 2013 – 2012.The study find out

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that a negative relationship exist between profitability and number of days accounts receivable and cash conversion cycle, but a positive relationship between profitability and number of days of inventory and number of days payable. According to the study, financial leverage, sales growth, current ratio and firm size have significant effect on the firm's profitability. The researchers concluded that firms can create value for their shareholders by reducing the number of day's account receivable and by increasing their inventories to a reasonable level.

Niresh (2012) carried out a study on working capital management and financial performance of manufacturing sectors in Sri Lanka. The major purpose was to investigate the relationship between working capital management and financial performance of listed manufacturing firms in Sri Linka. The study covered a six years period between 2008 – 2011. Return on assets and return on equity were used as performance measures whereas cash conversion cycle, current assets to total asset and current liabilities to total assets were used as working capital management measures.The study employed correlation and regression analysis models for analysis and the result of the analysis revealed that there is no significant relationship between cash conversion cycle and performance measures and hence the study concludes that, manufacturing firms in Sri Linka follow conservative working capital management policy.

Ogundipe, Idowu and Ogundipe (2012) studied working capital management, firms' performance and market valuation in Nigeria. The focus of this study was to examine the impact of working capital management on firms' performance and market value of firms in Nigeria. A sample of fifty-four non-financial quoted firms in Nigeria listed on the Nigeria stock exchange was selected for the period 1995 – 2009. The data for the study was sourced from annual reports of the sample firm for the period under review. Regression model was used for analysis and the result of the analysis revealed that significant negative relationship exist between cash conversion cycle and market valuation and firms' performance in Nigeria. The findings also confirmed that there is a significant relationship between market valuations; profitability and working capital component the study recommend that Nigeria firms should ensure adequate management of working capital especially cash conversion cycle components of account receivables, account payables and inventories, as efficiency working capital management is expected to contribute positively to firms' market value.

Raheman, Afza, Qayyum and Bodla (2010) Investigated working capital management and corporate performance of manufacturing sector in Pakistan. The major challenge was to evaluate the relationship between working capital management and profitability of manufacturing companies in Pakistan. The study covered the period 1998 – 2007. Balanced panel data of 2014 manufacturing firms was used which are listed in Karachi stock exchange firms.

The result indicated that cash conversion cycle, net trade cycle and inventory turnover in days are significantly affecting the performance of the firms. Financial leverage, sales growth and firm size also have significant effect on the firm's profitability. The study concluded that firms in Pakistan are following conservative working capital management policy and the firms are needed to concentrate and improve on their collection and payment policy. The study recommended that specialized persons in finance should be hired by the firms for expert advices on working capital management especially in the manufacturing sector in Pakistan.

In 2010, Mathura investigated the influence of working capital management on corporate profitability. The problem of the study was to find if cash collection period influences firm profitability. The study covered 30 firms listed in Nairobi Stock Exchange for the period 1993 – 2008. The tool for analysis was parted ols and the fixed effects regression model. The findings revealed that a highly significant negative relationship exist

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between the time it takes for firms to collect cash from their customers and profitability. According to him, more profitable firms take the shortest time for cash collection but positive significant relationship exists between inventory conversion period and profitability. The study concludes that the longer a firm takes to pay its creditors, the more profitable it is for them.

Gill, Biger and Mathur (2010) carried out a study on the relationship between capital management and profitability. The study covered 88 American first listed on New York stock exchange for a period 2005 – 2007. The tool for analysis was pearson Bivariate correlation analysis and weighted least squares (WLS) regression model. The focus was to find out the relationship between working capital management and profitability. The study found that there exist a significant relationship between the cash conversion cycle and profitability measured through gross operating profit.

RESEARCH METHODOLOGY

The research design for this study is ex-post fact. The ex-post facto research design is a method of finding out possible antecedents of event that have happened but cannot be manipulated by the investigator. Kerlingere and Rint (1986) opines that ex-post facto investigation seeks to reveal possible relationship by observing an existing condition or state of affairs and searching back time for plausible contributing factor. This design allows the researcher to describe observed events using the data derived from such observation to determine the relationship between working capital management and financial performance. Ani (2010), Madugba, Ekwe and Kalu (2015), Azubike ,Madugba & Okpe (2015) and Eke & Madugba, (2015) adopted the ex-post facto research design in their studies of this nature. The data for the study is sourced from the annual financial report published by the sampled companies. The dependent variable financial performance is measured by Earnings per share and Return on capital employed. Independent variable working capital is measured by Average payment period and Average collection period.

i. Earnings per share (EPS) profit after tax minus preference dividend divided by number of ordinary share capital in issue.
ii. Return on capital employed (ROCE) measured as profit after tax divided by total assets less current liability.
iii. Average payment period is measured as Accounts payable divided by purchases multiplied by 365 days.
iv. Average Collection period is measured as Account Receivable divided by Net Sales multiplied by 365 days.

Model Specification:-

$$\mathbf{EPS=f\ (APP, ACP)\ldots\ldots\ldots\ldots\ldots\ldots\ (1)}$$

$$\mathbf{EPS = \beta_0 + \beta_1 APP + \beta_2 ACP\ldots\ldots\ldots\ (2)}$$

$$\mathbf{ROCE= f\ (APP, ACP)\ldots\ldots\ldots\ldots\ldots\ .(3)}$$

$$\mathbf{ROCE=\beta_0 + \beta_1\ APP + \beta_2\ ACP\ldots\ldots\ldots\ (4)}$$

Where EPS= Earnings Per Share
ROCE= Return on Capital Employed
APP= Average payment period
ACP= Average collection payment.

Data presentation and analysis.

Ho_1: There is no significant relationship between working capital management and Earnings per share of manufacturing firms in Nigeria.

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Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.430[a]	.185	.134	1.11651

a. Predictors: (Constant), ACP1, APP1

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant	3.095	.957		3.234	.003
	APP1	.572	.232	.483	2.468	.019
	ACP1	-1.847	.799	-.452	-2.311	.027

a. Dependent Variable: EPS1

From the regression result presented in table 2.1 above, the co-efficient of regression β gave a value of 0.572.Showing a positive relationship between Average payment period (APP) and Earnings per share (EPS). Implying that a unit increase in APP will lead to 57.2% units increase in EPS of manufacturing firms. Also, the relationship between EPS and APP proved to be statistically significant as the computed t-statistic is 2.468 and the critical t-statistic is 1.960. However, the relationship between EPS and ACP is negative as the co-efficient of regression β showed -1.847 implying that a unit increase in ACP will lead to an equal decrease in EPS. However the relationship is significant at 0.05level.

Ho_2: There is no significant relationship between working capital management and Return on capital employed of manufacturing firms in Nigeria.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655[a]	.430	.394	.53355

a. Predictors: (Constant), ACP1, APP1

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.493	.457		5.452	.000
	APP1	.259	.111	.383	2.337	.026
	ACP1	-1.861	.382	-.798	-4.873	.000

a. Dependent Variable: ROCE1

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Considering the result of the regression for hypothesis two, the co-efficient of regression β showed 0.259. Implying that there is a positive relationship between APP and ROCE. Also that a unit increase in average payment period will lead 25.9% increase in ROCE. Inadition, the relationship is shown to be statistically significant as the calculated t-statistic of 2.337 with 0.026 significance level is greater than 1.960 critical t-statistics at 0.05 levels. However, average collection period showed a negative relationship with ROCE with co-efficient of regression value of – 1.861. But the relationship is shown to be statistically significant at 0.05 level.

CONCLUSION AND RECOMMENDATIONS

Hypothesis one of this study revealed that working capital as measured by Appeal ACP significantly impact on Earnings per share. Furthermore, hypothesis two showed that working capital as measured by Average payment period and Average collection period impact on Return on capital employed. Therefore, the study conclude that working capital management impact on financial performance of manufacturing firms in Nigeria.From the conclusion above, the study made the following recommendations which is believed by the researchers that it will help improve the performance of the manufacturing firms as:

- The management of manufacturing firms in Nigeria should exhibit carefulness in handling of stock/investors at least to ensure that their stock level will not be below the minimum stock level.
- Increase the time at which customers make payments to the company for goods bought.
- Professionals should be hired by these companies to ensure effective and efficient working capital management
- Much attention should be paid to cost of sales to ensure that it will not negatively affect prices of stock.

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Appendix 1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.430[a]	.185	.134	1.11651

a. Predictors: (Constant), ACP1, APP1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.049	2	4.525	3.629	.038[b]
	Residual	39.891	32	1.247		
	Total	48.940	34			

a. Dependent Variable: EPS1

b. Predictors: (Constant), ACP1, APP1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.095	.957		3.234	.003
	APP1	.572	.232	.483	2.468	.019
	ACP1	-1.847	.799	-.452	-2.311	.027

a. Dependent Variable: EPS1

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Appendix 2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655[a]	.430	.394	.53355

a. Predictors: (Constant), ACP1, APP1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.862	2	3.431	12.052	.000[b]
	Residual	9.110	32	.285		
	Total	15.971	34			

a. Dependent Variable: ROCE1

b. Predictors: (Constant), ACP1, APP1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.493	.457		5.452	.000
	APP1	.259	.111	.383	2.337	.026
	ACP1	-1.861	.382	-.798	-4.873	.000

a. Dependent Variable: ROCE1

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