Impact of Working Capital Management on Financial Performance of Quoted Health Sector Firms in Nigeria

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Abstract

The performance of any company is critical to its survival. Management of working capital involves the management of current assets and current liabilities of a firm. At every given time both the current assets and current liabilities exist in the business. "The working capital plays the same role in the business as the role of heart in human body. Working capital funds are generated and these funds are circulated in the business. As and when this circulation stops, the business becomes lifeless. This study examined the impact of working capital management on firms' performance by using audited financial statements of a sample of 7 listed companies in the health sector of the Nigerian Stock Exchange for the period of 2015 to 2017. The performance was measured in terms of profitability using return on capital employed and return on equity as dependent variables. The working capital was determined by the Cash conversion cycle, Accounts receivable collection period, inventory turnover period and accounts payables payment period are used as independent working capital variables. More so, control variables like current ratio are used as liquidity indicators, firm size as measured by logarithm of sales, and debt to asset ratio as leverage. The data was analyzed statistical tool, correlation analysis and regression models of cross-sectional and time series data were used for analysis. The study showed that the return on capital on capital employed (ROCE) is negatively related to receivable collection period (ACP), payables payment period (APP), inventory turnover period (ITP), cash conversion cycle (CCC) and debt to asset ratio (DR), which however was insignificant at 5% significance level. However, capital on capital employed (ROCE) was positively related to Current ratio (CR) and firm size (Size), with firm size having significant effect on profits.

Keywords: Working Capital, Financial Performance, Return on Capital Employed, Health Sector Firms

INTRODUCTION

The world economy was hit by an unprecedented financial and economic crisis in 2007-2009 that resulted in a global recession. In Nigeria, the economy faltered and was hit by the second-round effect of the crisis as the stock market collapsed by 70 per cent in 2008-2009 and many Nigerian banks sustained huge losses. However, the Nigerian economy has huge potentials for growth. To realize this, it is imperative that we learn lessons from the global financial crisis and take steps to not only fix the problems but evolve a healthy financial sector and ensure the banking sector contributes to the development of the real economy (Sanusi, 2012). The Nigerian economy under the regime of president Buhari slipped into recession in 2016, a development triggered by dwindling government revenue occasioned by the fall in oil prices in the international market and unrest in the oil-rich Niger Delta region. The National Bureau of Statistics (NBS) confirmed that the 2016 economic recession was a full year recession, and the worst in the country's history since 1987.(Mayowa, 2017). This study examines the impact of working capital management on financial performance of quoted health sector firms in Nigeria around the economic recession era: (2015-2017). The performance of any company is critical to its survival. This performance usually looks at the business and financial situation which are two distinct but extremely interdependent indicators of success or otherwise.

Working capital management will consider the currents assets and current liabilities. It is necessary to understand the meaning of current assets and current liabilities for learning the meaning of working capital. It is rightly observed that "Current assets have a short life span. These types of assets are engaged in current operation of a business and normally used for short– term operations of the firm during an accounting period. Cash balance may be held idle for a week or two, account receivable may have a life span of an average 30days period, and inventories may be held for above 30days. (Parasanna, 1984). At every given time both the current assets and current liabilities exist in the business. "The working capital plays the same role in the business as the role of heart in human body. A popular measure of working

capital management is the cash conversion cycle.Deloof (2003) indicated that the longer the time lags, the larger the investment in working capital, and a long cash conversion cycle might increase profitability because it leads to higher sales. However, corporate profitability might decrease with the cash conversion cycle if the costs of higher investment in working capital rise faster than the benefits of holding more inventories or granting more trade credit to customers. Therefore, it is a significant issue to know and understand the effects of working capital management and its influence on firms' performance. Also, several research works have identified the impact of working capital management on the performance of organizations, it is imperative for a significant work to be done on the effective of working capital management on the performance of Health sector companies in emerging stock markets like the Nigerian Stock Exchange (NSE).

When a business does not manage its liquidity well, it will have cash shortages and as a result experience problem paying its obligations when they fall due. Indeed, working capital starvation has generally been credited as a major cause, if not the main cause of small business failure in many developed and developing countries (Rafuse, 1996). The fact that an organisation makes profit is not necessarily an indication of the efficient management of its working capital because a company can be endowed with asset and profitability but short of liquidity, this means that its assets cannot readily be converted into cash (Oyewale, 2004). Business success depends heavily on the ability of financial managers to effectively manage the components ofworking capital (Filbeck and Krueger, 2005). This paper will go or examine the usefulness of financial ratios, particularly working capital ratios in evaluation of company's performance for funding decisions and running of day-to day operations of the business. To aid the achievement of the desired objective of this study, the researcher will attempt to test the following hypotheses:

H0: Working capital management does not have significant impact on firm's financial performance.

LITERATURE REVIEW

Conceptual Clarifications

Working capital management involves managing the firm's inventory, receivables, and payables to achieve a balance between risk and returns and thereby contribute positively to the creation of a firm value. Thus, the importance of maintaining an appropriate level of working capital and its contribution to business survival is a concept that should be understood by every company (Harris, 2005). Working capital is considered as the lifeblood of any business and its performance has significant impact on the overall performance of the concerned firms. Hampton (1989) stated that working capital policy is a function of two decisions: the appropriate level of investment in currents assets and the chosen methods of financing the investment. WCM is a therefore a fundamental part of any firm's overall corporate strategy to create value, to ensure financial health and provide competitive advantage (Deloof, 2003). WCM is also vital for the success and survival of businesses and for enhanced performance and contribution to economic growth (Padachi, 2006). The goal of WCM therefore, is to ensure that the firm can continue in its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses (Brigham and Houston, 2007).

Financial performance refers to a measure of the results of a firm's policies and operations in monetary terms. These results are reflected in the firm's return on capital employed (ROCE), return on assets (ROA), shareholder value, accounting profitability and its components. Ratios are simply relationships between two financial balances or financial calculations which establish our references so that we can understand how well an entity is performing financially. Ratios also extend the traditional way of measuring financial performance; by relying on financial statements (Saliha, 2011). To this study, the researcher has found a profitability and liquidity/working capital measures be appropriate and relevant; the return on asset and return on capital employed, as a measure of working capital management. The return on asset and return on capital employed measures a company's profitability from the financial

performance perspective, thus working capital ratios like inventory days, payable days and receivables were equally relevant.

Empirical Studies

Many researchers have studied working capital from different views and in different environments. The following were very interesting and useful for the research: Raheman and Nasr (2007) studied 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. They selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of six years from 1999 -2004 and found a strong negative relationship between variables of working capital management and profitability of the firm. They found that as the cash conversion cycle increases, it leads to decreasing profitability of the firm and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. Falope, and Ajilore (2009) used a sample of 50 Nigerian quoted non-financial firms for the period 1996-2005. Their study utilized panel data econometrics in a pooled regression, where time-series and crosssectional 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 for a sample of fifty Nigerian firms listed on the Nigerian Stock Exchange. Furthermore, they found no significant variations in the effects of working capital management between large and small firms.

Samiloglu and Demirgunes (2010) analysed the effects of working capital management on firm's profitability in Turkey for period 1998-2007. Empirical results showed that accounts receivable period, inventory turnover period and leverage significantly and negatively affect profitability. They also proved that cash conversion cycle, size and fixed financial assets had no statistically significant effect on profitability. Oladipupo and Okafor (2013) examined the implications of a firm's working capital management practice on its profitability and dividend payout ratio. The study focused on the extent of the effects of working capital management on the Profitability and Dividend Payout Ratio. Financial data were obtained from 12 manufacturing companies quoted on the Nigeria Stock Exchange over 5 years period 2002 - 2006. Using both the Pearson product moment correlation technique and ordinary least square (OLS) regression technique, they observed that shorter net trade cycle and debt ratio promote high corporate profitability. While the level of leverage has negative significant impact on corporate profitability, the impacts of working capital management on corporate profitability, the impacts of working capital management on corporate profitability insignificant at 5% confidence level.

METHODOLOGY

All information gathered for the purpose of this study is collected through primary and secondary approach to data gathering. This included observation, interview and discussion, analysis of annual reports and handbooks gotten from the company's library. Also, a host of books on finance were read and evaluated to generate theoretical knowledge to support my practical experience of the company's process. Population here refers to the totality of targeted companies that form the focus of a study. According to Egbui (1998), sampling involves the selection of several study units from a defined study population. A sample is therefore, a small representative of a large population. Consequently, given the fact that the study topic is more of an academic business research, the researcher collected data from seven (7) listed companies in the Healthcare sector of Nigerian Stock Exchange. To select sample firms, the researcher employed Non-probabilistic sampling specifically purposive sampling rather than taking the whole population to meet the requirements.

Furthermore, the study employed several variables which are stated below. They have been used to test the hypotheses of the study and they include dependent, independent and some control variables.

| Dependent | Return on Capital Employed (ROCE) | | | | |
|-------------|--|--|--|--|--|
| Dependent | Return on Equity, (ROE) | | | | |
| | Accounts Receivable Period (ACP) | | | | |
| Independent | Inventory Turnover Period (ITP) | | | | |
| | Accounts Payable Period (APP) | | | | |
| | Cash Conversion Cycle (CCC) | | | | |
| | Liquidity = Current Ratio (CR) | | | | |
| Control | Size of the Firm = Natural Log of Sales | | | | |
| | Leverage = Total Debt to Total Asset Ratio (DAR) | | | | |

Analytical Model

Descriptive statistics and inferential statistical techniques were used to analyze the data. Multivariate regression Model based on Cross sectional pooled data from the annual reports and other financial statements to assess the impact of working capital management on the industry's financial performance criteria.

$$ROCE = \beta o \sum_{t=1}^{n} \beta i Xit + \varepsilon$$

$$ROE = \beta o \sum_{t=1}^{n} \beta i Xit + \varepsilon$$

Source: Panigrahi, Anita Sharma (2013)

ROCE_{it} and **ROE**_{it} = Return on Capital Employed and Return on Equity of a firm i at time t; i = 1, 2, 3..., 7firms respectively.

 $\beta 0$ = the intercept of equation

 βi = Coefficient of X it variables

 \mathbf{X}_{it} =the different independent variables for working capital management of firm i at time t

 \mathbf{t} = Time from 1, 2..., 5 years ε = error term

The econometric models employed in this study were linear Multivariate Models which were develop as thus:

ROCEit = $\beta 0+\beta 1$ (ACPit) + $\beta 2$ (APPit) + $\beta 3$ (ITPit) + $\beta 4$ (CCCit) + $\beta 5$ (CRit) + $\beta 6$ (SIZEit) + $\beta 7$ (DARit) + ϵ **ROEit** = $\beta 0+\beta 1$ (ACPit) + $\beta 2$ (APPit) + $\beta 3$ (ITPit) + $\beta 4$ (CCCit) + $\beta 5$ (CRit) + $\beta 6$ (SIZEit) + $\beta 7$ (DARit) + ϵ

| ROCE _{it} | Return on Capital Employed of firm i for time period t |
|--------------------|--|
| ROE _{it} | Return on Equity of firm i for time period t |

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| ACP _{it} | The average collection period of firm i for time period t |
|--------------------------|--|
| ITP _{it} | Inventory turnover period of firm i for time period t |
| APP _{it} | The average payment period of firm i for time period t |
| CCC _{it} | Cash conversion period of firm i for time period t |
| CR _{it} | Liquidity (Current ratio) of firm i for time period t |
| DR _{it} | Leverage (Debt to asset ratio) of firm i for time period t |
| SIZE _{it} | Natural logarithm of sales of firm i for time period t |
| ε: | The error term that is a surrogate for all other variables influencing performance |

RESULT AND DISCUSSION

Descriptive statistics was compute as shown on the tablebelow. The table equally presents descriptive statistics for 7 listed companies in the health sector of the Nigerian Stock Exchange for the period of 3 years from 2015 to 2017. The study also employed nine variables, which were further broken into dependent and independent variables for analysis purpose.

| Variable | Ν | Mean | S.D | Minimum | Maximum |
|---|----|-------|------|---------|---------|
| | | | | | |
| Return on Capital Employed(%) | 21 | -0.19 | 0.98 | -4.54 | 0.25 |
| Return on Equity(%) | 21 | 0.18 | 1.06 | -0.55 | 4.81 |
| Current Ratio | 21 | 1.86 | 1.88 | 0.32 | 9.33 |
| Account Receivable Collection Period (Days) | 21 | 66 | 56 | 2 | 207 |
| Account Payable Payment Period (Days) | 21 | 82 | 100 | 6 | 447 |
| Inventory Turnover Period (Days) | 21 | 158 | 118 | 1 | 416 |
| Cash Conversion Cycle (Days) | 21 | 162 | 168 | -1 | 546 |
| Debt to Asset Ratio (%) | 21 | 0.46 | 0.24 | 0.03 | 1.07 |
| Firm Size (LN of Sales) | 21 | 19.60 | 3.69 | 11.79 | 23.37 |

Table: 4.1. Descriptive Statistics

Source: (Research data, 2021)

As presented on table 4.1, the mean value for return on capital employed is a loss -19% with a standard deviation of 98%. It has a minimum value of -454% while the maximum value is 25%. Return on equity has an average value of 18%, which can deviate from both sides of the mean value by 106%. Its minimum and maximum values are -55% and 481% respectively. The table also shows that on average the firms take 66 days to collect money from it debtors with a standard deviation of 56 days from the mean. The minimum debtors' collection time is 2days while the maximum is 207days. Similarly, it takes the firms an average of 82days to pay suppliers with a deviation from the mean of 100days. The maximum payment period is 447days while the minimum is 6days. The inventory turnover period has a mean of 158days with a standard deviation of 118days. The maximum inventory turnover time is 416days while the

minimum is 1day. Similarly, the cash conversion cycle is an average 162days and has a standard deviation. Its minimum and maximum values are -1day and 546days respectively.

The current ratio on table 4.1 as shown a mean of 1.86 of currents asset above current liability with a deviation a 1.88 from the mean on both sides. Current ratio in the health sector has a maximum of 9.33 and a minimum of 0.32. Debt to asset ratio has an average of 46% with a standard deviation of 24% from the mean. Its minimum and maximum values are 30% and 107% respectively. The mean value for firm size is 19.6 with a standard deviation of 3.69. The highest value for natural logarithm of sales is 23. 37 and the lowest is 11.79.

Correlation Analysis

The Correlation matrix is used for data to examine the relationship between variables such as those between working capital management and firm performance such return on equity and capital employed.

| | ROCEit | ROEit | CRit | ACPit | APPit | ITPit | CCCit | DRit | SIZEit |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ROCEit | 1 | | | | | | | | |
| ROEit | -0.939 | 1 | | | | | | | |
| CRit | 0.1928 | -0.119 | 1 | | | | | | |
| ACPit | -0.261 | 0.2442 | -0.243 | 1 | | | | | |
| APPit | -0.32 | 0.2861 | -0.308 | -0.026 | 1 | | | | |
| ITPit | -0.119 | 0.019 | -0.174 | 0.139 | 0.6787 | 1 | | | |
| CCCit | -0.049 | -0.055 | -0.114 | 0.468 | 0.2656 | 0.8566 | 1 | | |
| DRit | -0.557 | 0.4999 | -0.666 | 0.5112 | 0.2975 | 0.1127 | 0.1262 | 1 | |
| SIZEit | 0.5438 | -0.36 | 0.1816 | 0.1053 | -0.247 | -0.145 | -0.01 | -0.275 | 1 |

Table: 4.2. Correlation Matrix

Source: (Research data, 2021)

Table 4.2 shows that the return on capital on capital employed (ROCE) is negatively related to receivable collection period (ACP), payables payment period (APP), inventory turnover period(ITP), cash conversion cycle (CCC) and debt to asset ratio(DR). Thus, any increase in any of these factors will reduce the profitability of listed companies in the health sector of the Nigerian Stock Exchange. Cash conversion cycle (CCC) particularly shows a negative correlation coefficient of -0.049, as a result if it is increasing return on capital employed will be falling slightly. The correlation table also indicates that debt to asset ratio have negative significant impact on return on capital employed. However, capital on capital employed (ROCE) is positively related to Current ratio (CR) and firm size (Size). Thus, increase in liquidity and firm size will lead to a small increase in return on capital employed for the listed companies in the health sector. The relationship with firm size could also indicates that larger companies in this sector will report higher profit that smaller ones after probably enjoying economics of scale. It is equally good to note that from the table 4.2, the relationships between the variables correlations the exception of ROCE and ROE are weak, thus the change or impact will be small. According to Kennedy (2003), there is high correlation when the coefficient between the variables is greater than 0.80.

Regression Analysis

Table 4.3: Regression effect of explanatory variables on return on Capital (ROCEit)

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| Regression Statistics | | |
|------------------------------|-------|--|
| Multiple R | 0.769 | |
| R Square | 0.591 | |
| Adjusted R Square | 0.371 | |
| Standard Error | 0.799 | |
| Observations | 21 | |

| | Coefficients | Standard Error | t Stat | P-value |
|-----------|--------------|----------------|---------|---------|
| Intercept | -1.2873 | 1.4045 | -0.9165 | 0.3761 |
| ACPit | 0.2394 | 0.2669 | 0.8969 | 0.3861 |
| APPit | -0.2440 | 0.2664 | -0.9161 | 0.3763 |
| ITPit | 0.2424 | 0.2667 | 0.9090 | 0.3799 |
| CCCit | -0.2419 | 0.2668 | -0.9066 | 0.3811 |
| CRit | -0.1537 | 0.1276 | -1.2051 | 0.2496 |
| DRit | -1.8469 | 1.2560 | -1.4704 | 0.1652 |
| SIZEit | 0.1283 | 0.0541 | 2.3699 | 0.0339 |

Source: (Research data, 2021)

The results in Table 4.3 show that the independent variables had a correlation with return on capital employed at R = 0.769. The table also shows a coefficient of determination on profitability and performance of 0.591 as presented by the R^2 from 21 observations. Table shows that the *F*-statistic of 2.687 was insignificant at 5% level of significance, with p = 0.059 but significant at 10% confidence level. The results in Table 4.3 show that receivables collection period had an effect on return on capital employed and this 0.3861 was insignificant at 5% level. This do notreject the Null hypothesis that receivables collection period does not has significant effect on profitability of listed companies at the Nigerian Stock Exchange.

Similarly accounts payables payment period and inventory turnover period has insignificant effect on return on capital employed at 5% level with a p value of 0.3763 and 0.3799 respectively, and F- statistics of -0.9161 and 0.9090 respectively. Cash conversion cycle and current ratio at 5% level do not reject rejects the Null hypothesis with p values of 0.3811 and 0.2496 which are insignificant. Similarly leverage which has a P vale = 0.1652 and an F statistic of -1.4704 equally do not reject the null hypothesis. However, this was not the case with the firm size which had a significant effect on return on capital employed at 5% significant level with an F= 2.3699 and P= 0.0339. Thus, rejects the Null hypothesis and accepts that firm size does has significant effect on profitability and performance of listed companies at the Nigerian Stock Exchange.

| 8 | | | | 1 0 1 |
|-----------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| Regression Statistics | 1 | | | |
| Multiple R | 0.707 | | | |
| R Square | 0.500 | | | |
| Adjusted R Square | 0.231 | | | |
| Standard Error | 0.950 | | | |
| Observations | 21 | | | |
| | | | | |
| | | | | |
| | Coefficients | Standard Error | t Stat | P-value |
| Intercept | <i>Coefficients</i> 0.3632 | Standard Error 1.6698 | <i>t Stat</i> 0.2175 | <i>P-value</i> 0.8312 |
| Intercept ACPit | | | | |
| 1 | 0.3632 | 1.6698 | 0.2175 | 0.8312 |
| ACPit | 0.3632 -0.3513 | 1.6698 0.3173 | 0.2175 -1.1073 | 0.8312 0.2883 |
| ACPit APPit | 0.3632 -0.3513 0.3574 | 1.6698 0.3173 0.3167 | 0.2175 -1.1073 1.1284 | 0.8312 0.2883 0.2795 |

Table 4.4: Regression effect of explanatory variables on return on Equity (ROEit)

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| CRit | 0.1973 | 0.1516 | 1.3011 | 0.2158 |
|--------|---------|--------|---------|--------|
| DRit | 1.9924 | 1.4933 | 1.3343 | 0.2050 |
| SIZEit | -0.0888 | 0.0644 | -1.3796 | 0.1910 |

Source: (Research data, 2021)

The results in Table 4.4 show that the independent variables had a correlation with return on capital employed at R = 0.707. The table also shows a coefficient of determination on profitability of 0.500 as presented by the R^2 from 21 observations. Table shows that the *F*-statistic of 1.857 was insignificant at 5% level of significance, with p = 0.159. The results in Table 4.3 show that receivables collection period influenced return on capital employed and this 0.2883 was insignificant at 5% level. This do not reject the Null hypothesis that receivables collection period does not has significant effect return on equity and thus company's profitability. Similarly accounts payables payment period and inventory turnover period has insignificant positive and negative effect on return on capital employed at 5% level with a p value of 0.2795 and 0.2830 respectively, and F- statistics of 1.1284 and -1.1199 respectively.

Cash conversion cycle and current ratio at 5% level do not reject rejects the Null hypothesis with p values of 0.2848 and 0.2158 which are insignificant but positive F statistic of 1.1156 and 1.3011 respectively. Similarly leverage which has a P vale = 0.2050 and an F statistic of 1.3343 equally do not reject the null hypothesis and has an insignificant positive effect.

CONCLUSION AND RECOMMENDATIONS

The study found that inventory turnover period had a negative insignificant effect on profitability (ROCE) of firms. This leads to the conclusion that inventory turnover period does not influenced profitability of firms in the health sector of the Nigerian Stock Exchange. The study found that account payables payment period had a negative but insignificant effect on performance of firms in the health sector of the Nigerian Stock Exchange. This is consistent with some studies in the past, that firms' performance is not influenced by the account's payables payment period. The study also revealed that accounts receivablescollection period had a negative but insignificant effect on profitability. This leads to the conclusion that accounts receivables collection period does not affect the financial performance. This is consistent with some of the past studies on working capital management. Further, the study has found that negative insignificant relation between cash conversion period and performance of firms in the health sector of the Nigerian Stock Exchange. The negative relationship between accounts receivables and firms' performance suggests that high profitable firms will pursue an increase of their accounts receivables to increase their cash gap in the cash conversion cycle. However, this may not be the case as the relationship is not significant. The study revealed that the current ratio had positive but insignificant effect on profitability of firms in the health sector of the Nigerian Stock Exchange. This is consistent with prior studies; the study concludes that current ratio will not affect the on profitability of firms in the health sector of the Nigerian Stock Exchange. The study also found that the firm size had a positive and significant effect on profitability of firms in the health sector of the Nigerian Stock Exchange.

The study makes two key recommendations. First, the study recommends that listed companies in the health sector of the Nigerian Stock Exchange should not focus much attention on increasing variables like account receivable collection period, accounts payables payment period, inventory turnover periods and cash conversion period to improve their performance. Secondly, the study recommends that for that listed companies in the health sector of the Nigerian Stock Exchange to improve their financial performance there is need to increase the firm size which is a natural logarithm of sales. Higher sales (firm size) will lead to higher performance. This can be achieved by expanding sales volumes, market shares and expanding capacity meet the health need of Nigeria which has loses a lot of foreign earnings to medical tourism.

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