

The Relationship between Working Capital Management and Account Receivable

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ABSTRACT

This paper dealt with the relationship between working capital management and account receivable in some selected metal manufacturing companies in Nigeria. In order to achieve this objective of the study, a survey designed was adopted to gather data for the study. The study made copious use of secondary data derived from the annual financial report of the selected metal manufacturing companies for the periods 2007-2016 financial years. More so, a purposive random sampling technique was used to select five metal manufacturing companies from the population of 15 metal manufacturing in Nigeria. The ordinary least square regression was used to test the hypotheses formulated for the study. The result of the findings revealed that there was a significant relationship between working capital management and account receivable. This inference was based on the fact that the p-value of the f-statistic computed of 0.000 was less than the critical value of 5%. In fact, the coefficient of determination (r^2) of 0.996 obtained indicated the fact that 99.60% of account receivable might be due to effective working capital management. It was concluded that working capital management and account receivable were positively related. It was recommended that effective working capital management should be encouraged in the metal manufacturing companies for the betterment of their accounts receivable.

INTRODUCTION

Firms maintain certain percentage of assets as cash, but many firms have increased their cash holding levels. Ferreira & Vilela (2004) investigate European monetary union corporations of cash to assets ratio and show that corporation holds 15% of their total assets in cash or cash equivalents. Bates *et al.*, (2006) report that the average cash to assets ratio for U.S. industrial firms increases with 129 % from 1980 to 2004 and argue that the change in cash holdings is not the result of recent build-up but a "secular trend". They use several variables to seek the motivation of US firms for corporate cash holdings and find that in

order of importance, the change in net working capital of cash is the most important one.

Working capital, also known as net working capital or NWC, is calculated as current assets minus current liabilities. The major components of working capital are accounts receivable, inventories, cash and cash equivalents and accounts payable. Almeida *et al.*, (2004) state the working capital can be a substitute for cash. Therefore the changes in net working capital affect the cash holdings. Besides, the changes in short-term debt could be a substitute for cash because firms may use short-term debt as financial resource. Shin & Soenen (1998) point out that the more efficient the firm is in managing its working capital, the less the requirements for external financing and the better financial performance.

Working capital, as cash substitute, has been identified as a determinant of corporate cash holdings in previous studies but not in depth. Opler *et al.*, (1999) state that net working capital can be a substitute for cash deferred by their empirical test. Ferreira & Vilela (2004) investigate the corporate cash holdings of emu countries and disclose that cash held by firm is negatively affected by the amount of liquid asset substitutes. Ozkan & Ozkan (2004) indicate that firms can use their non-cash liquid assets, defined as net working capital minus cash and marketable securities to substitute for cash holdings.

In the recent empirical finance literatures, some in-depth studies have been conducted in discovering and providing the alternatives to explain corporate cash holdings by working capital management. bates et al (2006) argue that the average cash ratio increases because firms change their characteristics such as firms having riskier cash flow; they hold less inventories and accounts receivable and increase the r & d expenses. Capkun & Lawrence (2007) analyse the operating assets and cash holdings of us manufacturing firms and find a steady decrease in operating assets and an increase in cash holdings. They explain that the increase in cash holdings by firms can be viewed as a “counter balance” by the reduction in accounts receivable and inventory and firms hold more cash reserves to secure increased trade credit risk.

Abel (2008) examines the Swedish manufacturer smes and finds that high efficiency in the management of working capital means that current assets are quickly transferred into cash, to move the balance from average investments in inventory and accounts receivable to cash in order to have high cash holdings. Teruel & Solane (2008) analyse the Spanish smes' corporate cash holdings and find that firms with more liquid assets intend to reduce their cash levels because these assets can be used as cash substitutes and firms with a higher proportion of short-term debt will hold higher levels of cash so that it lowers the riskier from non-renewing short-term debts.

Previous and recent studies of corporate cash holdings explained by the working capital management provide an anchor for further research on this topic. As Abel (2008) remarks, "theory on the working capital management perspective in explaining the corporate cash holdings is not very developed". This paper explores the relationship between the working capital management and account receivable and it investigates the correlation on how working capital management and receivable affect each other.

Statement of the Problem

Some of the manufacturing firms, especially the metal manufacturing companies that are still in business and are listed on the Nigeria stock exchange finds it difficult to pay dividends to their shareholders. Notable examples include Mategoadex Metal Company has not paid dividend since 1997 while Lawood Metal Nigeria has not paid since 2001 (Salandeen, 2001). Some Nigerian workers were forcefully disengaged from their services. An example is Ajaokuta Steel Industry which had reduced their staff from five thousand to one thousand in 2007. Despite the above scenario, the companies post huge figures of their accounts receivables. It is as a result of the above problem that the researchers deemed it necessary to examine the relationship between working capital management and account receivables on corporate profitability of metal manufacturing companies in Nigeria quoted on the Nigerian stock market.

Objectives of the Study

The general objective of this study is to examine the relationship between working capital management and account receivable of metal manufacturing companies in Nigeria. The specific objectives are;

1. To examine the effect of account receivable on working capital management of the metal manufacturing companies.
2. To identify the effect debt ratio on working capital management of metal manufacturing companies.
3. To examine the effect of sales growth rate on working capital management of the metal manufacturing companies

Research Questions

1. Is there any significant relationship between account receivable and working capital management of the metal manufacturing companies?
2. Is there any significant relationship between debt ratio and working capital management of the metal manufacturing companies?
3. Is there any significant relationship between sales growth rate and the working capital management of the metal manufacturing companies?

Hypotheses

The following hypotheses shall be proved in order to address the objectives.

1. There is no positive significant relationship between working capital management and account receivable of the metal manufacturing companies in Nigeria.
2. There is no positive significant relationship between debt ratio and working management
3. Sales growth rate has no significant positive relationship on working capital management.

LITERATURE REVIEW

Jack and Matthew (1994), state in their article, management of accounts receivable that the simplest means of recovering your accounts receivable is to take active steps to avoid the process entirely. Venkata *et al.*, (2013) in their study impact of receivables' management on working capital and profitability. A study of selected cement companies in India collected their data from the annual reports from the selected cement companies from 2001 -2010. The ratios

which highlight the efficiency of receivables management through receivables to current assets ratio, receivable to total assets ratio, receivable to sales ratio, receivable to turnover ratio, average collection period, working capital ratio, profitability ratio have been completed using ANOVAs statistical tool to know the impact of working capital and profitability of the selected cement companies. Working capital management and profitability were considered as dependent variables. The investigation reveals that the receivable management across cement industry is efficient and showing significant impact on working capital and profitability.

Ramchandran, and Janakiraman, (2009), analyzed the relationship between working efficiency and earnings before interest and tax of the paper industry in Indian. The study revealed that cash conversion cycle and inventory days had negative correlation with earnings before interest and tax, while accounts payable days and accounts receivable days related positively with earnings before interest and tax. Grzegor, (2008) in his study, "a portfolio management approach in accounts receivable management", used portfolio management theory to determine the level of accounts receivable in a firm. He found out that there was an increase in the level of accounts receivable in a firm and it increased both net working capital and cost of holding and managing account receivables.

Ksenija (2013) investigates how public companies listed at the regulated market in the Republic of Serbia manage their accounts receivable during recession times. A sample of 108 firms is used. The accounts receivable policies are examined in the crisis period of 2008-2011.

The short-term effects are tested and the study shows that between accounts receivables and two dependent variables on profitability, return on total asset and operating profit margin, there is a positive but no significant relationship. This suggests that the impact of receivables on firm's profitability is changing in times of crisis.

Research studies carried out by Deloof (2003), Laziridis and Tryfonidis (2006), Garcia-Jeruel and Martinez- Solano (2007), Samiloglu and Demrigunes (2008) and Mathura (2010), in Belgium, Greece, U.S.A, Spain, Turkey and Kenya

respectively, all point out to a negative relationship between accounts receivable and firm profitability. Contradicting evidence is found by Sharma and Kumar (2011). He found a positive relationship between roa and accounts receivable.

Singh and Pandey (2008) had an attempt to study the working capital components and its impact on profitability of Hildalco Industries Limited for a period 1990 to 2007. Results of the study showed that receivable turnover ratio had statistical significant impact on the profitability of Hibdalco Industries Limited. Jack and Matthew (1994) state in their article "management of accounts receivable", that the simplest means of recovering your accounts receivable is to take active steps to avoid the process entirely. Venkata *et al.*, (2013):- their study, "impact of receivables management on working capital and profitability." a study of selected cement companies in India, collected their data from the annual reports. The selected cement companies were from 2001 - 2010. The ratios which highlight the efficiency of receivables management viz, receivables to current assets ratio, receivable to total assets ratio, receivable to sales ratio, receivable to turnover ratio, average collection period, working capital ratio and profitability ratio have been completed using ANOVAs statistical tool to know the impact of working capital and profitability of the selected cement companies. Working capital management and profitability were considered as dependent variables. The investigation reveals that the receivable management across cement industry is efficient and showing significant impact on profitability.

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METHODOLOGY

The research work focuses on the empirical analysis of the relationship between working capital management and account receivable in some selected metal manufacturing companies in Nigeria. The ex-post factor research design was used because it involves events that have already taken place in the past. The records observed were from 2007-2016, a period of ten years. The variables tested are accounts receivable, return on total assets, debt and sales.

Population and Sample Size

The population of this study comprises of all manufacturing companies quoted on the Nigeria stock exchange. The sample size consists of only companies in metal manufacturing sector.

Nature and Source of Data

The study used secondary data that were extracted from the selected building materials, chemical and paint manufacturing companies in Nigeria. Data from annual reports are proven to be more reliable because companies are required to keep accounts and to produce accounts that give true and fair view of their company in compliance with the companies and allied matters decree 1990. The

data for the study are working capital, total assets, receivables, long term debt, and sales.

Descriptive Variables

The researchers made previous empirical studies their primary guideline and their variables are consistent with Basley and Brigam (2005), Samiloglu and Demrigunes (2008).

Dependent Variable (Working Capital Management): Working Capital Is The Dependent Variable Of This Study. Return On Total Assets Was Used To Analyse The Impact Of Accounts Receivable Management On The Firm's Working Capital Management (Pandey, (2008), Lazarridis And Trynidis, (2006).
Working Capital Management = WC/Total Assets

Independent Variables

Accounts Receivable: Accounts receivables are customers who have not yet made payment for goods or services which the firm has provided. In this respect account receivable is calculated as accounts receivable divided by sales. This variable represents the receivable that the firm will collect from its customers (Basley and Bringam, (2005), Samiloglu and Demrigunes, (2008).
Account receivable = receivables (debtors)/ sales

Debt: When external funds are borrowed. Example from banks at a fixed rate; they are assured to be invested in the company and a higher interest paid to the bank. This is measured by long term debt divided by total assets. Debt= total debt/ total assets

Sales Growth: Sales growth is the increase or decrease of annual sales measured as a percentage. It is measured in this study as sales-sales divided by sales. Sales = sales-sales.

Analytical Tool for the Test of Hypotheses

The data collected were analysed using multiple regression model, and the best fitted to the analysis was selected. This multiple regression models are as follows:-

$$WCM= \log B_0 + \log B_1 (AR) \text{ Log} + B_2(SL) + B_3(DT) + U_1 \dots \dots \dots (I)$$

Population and Sample Size

The population of this study is all the manufacturing companies in Nigeria, while the sample size is dependent on the metal manufacturing companies whose data are available.

Nature and Sources of Data

Secondary data were used and were extracted from the annual reports and statements of accounts & building material/chemical and paint companies in Nigeria.

Technique Used For Test of Hypotheses

Generalized least square multiple regression analytical tools were used to test the hypotheses. They were used to measure the impact which the variables have on working capital management.

$$Y = B_0 + B_1 + B_2 + B_3 + U \text{----- (ii)}$$

EMPIRICAL RESULTS

Table 4.1: Analysis Of Variance Showing F-Calculated For Testing the Overall Significance of the Null Hypothesis

SV	SS	DF	MS	F-Ratio	P-Value
Regression	3467.896	2	1733.948	201.998	0.000
Residual	231.760	27	8.584		
Total	3699.656	29			

Source: Authors' Computation, 2017

Table 4.2: T-Calculated For Testing the Significance of Individual Regressors on Working Capital Management

Model	Unstandardized Coefficient Std. Error	B	Standardized Coefficient Beta	T-CAL	P-Value
Constant	-13.678	14.089	-	0.971	0.564
ACCREC(X ₁)	0.897	0.023	0.456	39.000	0.000
DEBTRAT(X ₂)	1.458	0.112	0.348	13.018	0.002
SALESGROW(X ₃)	0.909	0.086	0.194	10.570	0.012

Source: Authors' Computation, 2017

Table 4.3: Coefficient of Determination Computed for Determining The Overall Contribution of Predictors' Variables on Working Capital Management

R	R ²	Adjusted R ²	Standard Error Of The Estimate
0.998	0.996	0.994	1.453

Source: Authors' Computation, 2017

Discussion of Results

Tables 4.1 to 4.3 above present the results of the test statistic computed for the research work. In table, 4.1 the p-value of the f-statistic calculated of 0.000 was less than the critical value of 5%. This implied that the null hypothesis which stated that, 'there was no significant relationship between working capital management and account receivable' was rejected. It could be inferred that there was a significant relationship between working capital management and account receivable at the selected metal manufacturing companies in Nigeria. This assertion was in line with the finding of Ayinde (2012) which concluded that account receivable had both short and long terms impact on management of working capital in any of the manufacturing companies. He continued further by pointing out that inappropriate decision by the management of a company concerning the company account receivable parameters might spell doom for the company in terms of continuing in business and continuing in operational engagement of the enterprises. Therefore, adequate management of account receivable has the tendency of not only enhancing a company's operations but could also improve the performance of the company's profitably.

More so, in table 4.2, the p-value computed for account receivable of 0.000 was less than the critical value of 5%. This indicated that the null hypothesis which stated that account receivable was not significant on working capital management of an organisation was rejected. It could be asserted that account receivable and working capital management were directly related. This revealed that account receivable has a positive impact on working capital management. Appropriate management of account receivable influenced might lead to improvement in working capital for the selected manufacturing company. Moreover, there was a significant relationship between debit ratio and working capital management. This was premised on the fact that the p-value of the t-calculated for debt ratio of 0.002 was less than the critical value of

5%. In fact, there was a significant relationship between sales growth rate and working capital management of the selected manufacturing companies. This assertion was based on the fact that the p-value of sales growth rate of 0.012 was less than the critical value of 5%.

The relationship between account receivable and working capital management was positive. This was so based on the fact that the regression coefficient obtained for account receivable of 0.897 indicated an existence of a positive relationship between account receivable and working capital management. The resultant effect of this was that a unit in decision of the selected metal manufacturing companies in favour of account receivable would lead to a more than a unit improvement in working capital for the organisation. In addition, the regression coefficient obtained for debt ratio of 1.458 revealed an existence of a positive relationship between debt ratio and working capital management. This consequently implied that appropriate management of debt portfolio of the selected manufacturing companies (metal) would contribute positively to increase in working capital for the organisation. Also, there was relationship between sales growth rate and working capital management was positive due to the fact that the regression coefficient obtained for sales growth rate of 0.909 was positive. Therefore a unit improvement in sales growth rate for the selected metal companies might lead to a more than a unit increase in working capital management.

Also, in table 4.3, the coefficient of determination (r^2) obtained of 0.996 revealed the fact that 99.60% of working capital available at the selected metal manufacturing companies was due to effective managing of account receivable, debt and sales growth rate at the companies. Hence, account receivable, debt and sales growth rate were good predictor variables for the working capital management.

CONCLUSION AND RECOMMENDATIONS

Conclusions

The broad objective of this research work was to examine the relationship between working capital management and account receivable using some selected metal manufacturing companies in Nigeria as the study case. The results of the findings revealed that;

- There was a significant relationship between account receivable and working capital management.
- Sales growth rate was significant on account receivable and resultantly significant on working capital management and
- Debt portfolio of the selected metal manufacturing companies was significant on working capital management.

Recommendations

The result of the findings revealed that there was a significant relationship between account receivable and working capital management. Based on the results and conclusion of the study, the following recommendations were made.

- The management of the selected metal manufacturing company must, as a matter of necessity, set in motion appropriate management strategy that enhances their account receivable portfolio.
- There was need for the management of the metal manufacturing companies to embark on intense sales promotion that would not only increase their sales volume but would
- Also ensure that customer's patronage was consistently retained overtime. This could be achieved through appropriate marketing strategies particularly global marketing where companies in similar firms organise to promote their products jointly.
- The debt portfolio of the metal manufacturing companies especially those debt relating to debtors need to be handed over to expert who could manage the account appropriate. More so, there was need for the management of the metal manufacturing firms to embark on intense debt recovered needful to enhance their working capital position for continuous operation and
- Proper accounting in line with acceptable accounting standard should be enshrined in the metal manufacturing companies.

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