INTERNATIONAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD ISSN: 2455-0620 Volume - 6, Issue - 2, Feb – 2020
Monthly, Peer-Reviewed, Refereed, Indexed Journal with IC Value: 86.87 Impact Factor: 6.497
Received Date: 27/01/2020 Acceptance Date: 08/02/2020 Publication Date: 29/02/2020

Effect of Efficient Working Capital Management on the Sustainability of Quoted Manufacturing Firms in A Recessed Economy like Nigeria, 2008-2018

Nnamani, Chidiebere
Department of Accountancy, University of Nigeria, Enugu Campus, Nigeria

Abstract: *This study revealed how inefficient working capital management led to the failure of many big manufacturing firms in Nigeria within 2008 and 2018. It is aimed at developing a "failure framework" for "why and under what circumstance has poor working capital management caused great firms to fail". The study used profitability indices of ROA, ROE, and working capital indices Receivables Conversion Period (RCP), Inventory Conversion Period (ICP) and sampled failed manufacturing firms in Nigeria. The secondary data was collected from their Annual Financial Statements submitted to Nigeria Stock Exchange prior to their failure or relocation out of Nigeria. The Robust Least Squares (RBL) regression technique was employed because of its uniqueness of providing robust estimates in the presence of non-normality of data series amongst others. The researcher did not provide enough evidence to predict exact probability of failure but the study among other things reveals that (i) undue long receivable collection period significantly and negatively affected the profitability of quoted manufacturing firms in Nigeria. (ii)There is a significant relationship between inventory conversion period and return on assets of the quoted manufacturing firms in Nigeria; such that the longer the inventory conversion period the lower the return on assets. The study recommends that firms should continue to maintain working capital levels at a proportion that is adequately covered by their assets and adopt working capital policies that ensure revenue stability.*

Keywords: *Effect of Working Capital Management, Receivable Collection Period, Inventory Conversion Period.*

1.1 INTRODUCTION:

The manufacturing sector has been recognized as a significant sector in the socio-economic development and provides a significant contribution to the growth of the economy of any country (Kodithwaku, 2016). The economic growth and development of many countries, especially the developing economies like Nigeria depend heavily on the manufacturing sector (Ogbeide, 2017). For instance, it has been observed that in recent times the economy of China has actually transformed positively as a result of effective and efficient improvement in their manufacturing sector and now rose up to become among the fastest growing economies in the whole world (Rahman, Uddin& Ibrahim, 2015). Hence, the sector plays a vital role as a driving force of an economy. Due to the expected importance of manufacturing sector to the Nigerian economy, the government has over the years put in place different policies that will enable the sector strengthen its operations and widen its scope of activities in order to improve its financial performance and maximize the wealth of its shareholders.

However, in recent times, it has been observed that the contribution of manufacturing sector as a share of total economic output in Nigeria has generally declined and some manufacturing firms have actually gone into liquidation. Many factors have been adjudged to have contributed to the decline in the sector's share of the GDP overtime amongst which are illiquidity, insolvency and failure to make sufficient profits. These problems show both the vulnerability of manufacturing firms to global economic pressures, as well as the impact that policy changes can have in reshaping the sector (National Bureau of Statistics, 2016). Therefore, manufacturing firms are creating various means towards the advancement of their liquidity / profitability positions in a bid to achieving their sustainability. One of the viable strategies adoptable by manufacturing organizations to improve liquidity and profitability (market capitalization) is efficient working capital management.

In Nigeria, the manufacturing sector is among the sectors that have a much number of firms listed in the Nigerian stock exchange. It is also on record that the major income generation segment in the nation is the oil sector followed by the manufacturing sector (CBN, 2012). In view of this, working capital management is of particular importance to both the small, medium and large enterprises as it most needed to ensure profitability and increase expansion which is an essential prerequisite for solving the country unemployment problem. This study examines how inefficient working capital management contributed to the failure of major manufacturing companies in Nigeria between 2008 and 2018.

2. REVIEW OF RELATED LITERATURE:

2.1 Conceptual Review

2.1.1 Concept of Working Capital

The term working capital is "that fraction of total fund needed for the daily business of an entity" (Nwude, 2004:627). Monday, Lawal and Ilorri (2015) see it as the assets of a firm which is the portion of financial resources of business that transforms from one type of resources to another during the daily activities of business. It is basically short-term resources available to a company for financing its day-to-day operations (Adarquah, 2013; Loen, 2013). Ani, Okwo and Ugwunta (2013) are of the view that working capital is the inventory stockpiles that has a transfer or resale value in order to generate earnings. For Vallalnathan and Joriye (2012), it is the stream of ready resources needed for the working concern while, Makori and Jagongo, (2013) and Sarbapriya (2012) see it as the outcome of the time lag between the outlay for the acquisition of raw materials and the collection from the sales from finished goods. Working capital is the essential components of total capital for any business organization to operate their daily activities (Rahman, Uddin and IIbrahim, 2017). While according to Akinyomi and Tasiie (2012) and Falope and Ajilore, (2009), it is simply firm's investment in short-term assets. Likewise Nguyen, Dung-Tran and Ngugen, (2016) defined it as the difference between current assets and current liabilities.

2.1.2 Working Capital Management.

Working capital management is best described by the cash conversion cycle (Loannis and Dimitrios 2006). According to Rahman, Uddin and IIbrahim, (2017) working capital management refers to the management decisions and strategies that are adopted by companies in order to deal with problems relating to the management of working capital. Kandpal and Kavidaya (2013) see it as decisions that relate to investment in current assets, current liabilities and the inter relationship that arise between them. Mamoun (2011) views it as the quality of current assets items and takes into consideration the trade-off between risk and return. For Afza and Nazar (2010) working capital management is a fundamental part of the overall corporate strategy to create the shareholder's value.

2.3 Empirical Review

Chakraborty (2018) studied the impact of working capital turn over on Indian Pharma companies profitability (return on capital employed, return on equity, return on total assets earning per share and price/earnings ratio) for the period of 2011-2017, using current assets, current liabilities as the independent variables. Thus, applying ANOVA the results showed that there was no relation between working capital turnover and the profitability measures.

Hassan, (2017) studied the effect of working capital management (cash conversion cycle CCC, stock turnover ratio ICP, receivable turnover ratio RCP, payables turnover ratio PDP) on financial performance (return on assets) of 19 water processing firms in Portland state spanning from 2011-2015. Applying multiple linear regression analysis, the results indicated that cash conversion cycle, stock turnover ratio and receivable turnover ratio significant effect on profitability with only cash conversion cycle positive while payables turnover had a negative though non-significant effect.

Jason, (2017) investigated the effect of working capital management on 69 manufacturing firms listed on Jonesburg Stock Exchange during the period 2007-2016 South Africa. ROA was used as independent variable while ACP, APP, ICP and CCC were the independent variables. The study applied multiple regression analysis and the results showed that ACP (non-significant) and APP had negative impact while ICP and CCC had positive impact.

Oyedele, Adeniram and Oluwatosin, (2017) examined the effect of working capital management on financial performance of Nigeria Breweries PLC and CCC, Creditor conversion period, ICP and Debtor conversion period were used as independent variables while ROA was the dependent variable. Study employed multiple regression analysis and the results revealed that CCC, ICP, CCP and DCP were negatively related to ROA. Only CCC was significant.

Hassani, and Tavosi (2014) investigated the relationship between Aggressive / Conservative working capital policies and Profitability risk in Tehran Stock Exchange listed Companies. The sample include 274 companies over the period 2006-2012, using regression analysis the result indicated negative relationship between working capital investment and profitability risk measure and a positive relationship between working capital finance policy and profitability risk measure (return on equity).

Onwumere, Ibe, and Ugbam (2012) evaluated the impact of working capital management policies of 28 Nigeria firms profitability quoted in Nigeria Stock Exchange for period 2004-2008.Adopting the aggressive investment working capital policies and aggressive financing policies as independent variables and return on assets as dependent variable, then size and leverage as control variable,employed multiple regression analysis and the result revealed that aggressive financing policies have a positive non- significant impact on profitability.

3. METHODOLOGY:

The study adopted expost-facto research design. The study necessitated the use of secondary data covering a period of 2008 to 2018.The data from the selected manufacturing companies were collected from the central bank of Nigeria (CBN) annual reports, the Nigeria Stock Exchange annual Statistical Bulletin and fact book and the annual accounts of the individual firms under consideration. The populations of the study comprised of thirteen (13) manufacturing companies quoted in the Nigerian stock Exchange (CBN, 2019; NSE, 2019).
The sample for this study was taken from its population.

3.1 Model Specification

For the purpose of our study, we developed a model which was adopted from the work of Osundina (2014) with slight modification by incorporating other profitability variables not previously captured and decomposing working capital management variables (receivable collection period, inventory conversion period, payable deferred period, cash conversion period**,** aggressive investment working capital policy and aggressive financing working capital policy) to suit our purpose.

The general form of the empirical model to be estimated for this study will be consistent with and specified as:

$GOP_{it} = \beta_0 ++ \beta_1 RCP_{it} + \beta_2 ICP_{it} + \beta_3 PDP_{it} + \beta_4 CCC_{it} + \beta_5 AIF_{it} + \beta_6 Afp_{it} + \varepsilon_{it}$
Where:
GOP = Gross Operating Profit
β_0 = Constant
$\beta_1$to β_6 = Coefficients of the independent variables and parameters to be estimated
RCP = Receipt collection Period
ICP = Inventory Conversion Period
PDP = Payable Deferred Period
CCC = Cash Conversion Period
AIF= Aggressive Investment Working Capital Policy
AFP= Aggressive Financing Working Capital Policy
irepresent companies in the sample and ***t*** represents the scope or period of study
U_t=Error term
Our Apriori expectation is stated as: $\beta_1>0$, $\beta_2>0$, $\beta_3>0$, $\beta_4>0$, $\beta_5>0$

4. PRESENTATION AND ANALYSIS OF RESULTS:

4.1.Nigeria – Stock Exchange Market capitalization of listed companies in current prices (2008-2018)

DATE	VALUE	CHANGE, %
2018	31,520,550,000.0	-15.31 %
2017	37,217,620,000.0	24.92 %
2016	29,792,434,000.3	-40.38 %
2015	49,973,880,000.0	-20.38 %
2014	62,766,310,000.0	-22.14 %
2013	80,609,900,000.0	43.42 %
2012	56,205,200,000.0	44.01 %
2011	39,028,390,000.0	-22.79 %
2010	50,546,400,000.0	56.86 %
2009	32,223,400,000.0	-32.95 %
2008	48,062,280,000.0	-43.39 %
2007	84,894,570,000.0	

Fig. 1: Source: Nigeria - Market capitalization of listed companies in current prices (2018)

Historically, the Nigeria Stock Market NSE reached an all-time high of 48,062million US dollars or -43.39%in March of 2008.The NSE-All Share decreased points 31,520 million US dollars or -15.31% since the beginning of 2018, according to trading on a contract for difference (CFD) that tracks this benchmark index from Nigeria (Nigeria Stock Exchange, 2019). Though Nigeria market capitalization fluctuated substantially in recent years, it tended to increase through 1996 - 2018 period ending at 31,520 million US dollars in 2018.This decrease is as a result of inefficient working capital management policies and aggressive financing policies of Nigeria government on Nigerian manufacturing firms

which have even make some firms to move to other African countries because they cannot survive the adverse financial policy and the economy policy of Nigeria. From the NSE report in 2008 we discover that there was a high profitability (market capitalization) of manufacturing firms in 2008 than 2018.

4.2. Corporate Financial Performance and Working Capital Regression

In evaluating the impact of working capital policy on corporate profitability the study employed several measures of profitability such ROA, ROE and Tobin Q. Based on the comparison between the mean of AIP and AFP for the firms and the manufacturing industry mean, the estimations are disaggregated into aggressive and conservative samples where aggressive working capital policy firms are those having AIP + AFP average > industry mean and Conservative working capital policy is such that AIP + AFP average <sample mean(For the purpose of the seminar we will be focusing on ROE). The robust regression results are presented and discussed below;

Table 4.2: ROE and Working capital policy

	Aprori sign	**Aggressive policy** {AIP + AFP average > sample mean}	**Conservative policy** {AIP + AFP average <sample mean}
C	+	-4.8568 (4.2074) {0.2484}	44.8841* (7.6178) {0.000}
AFP	+	-1.8959 (1.6723) {0.2570}	-9.1529 (24.919) {0.7134}
AIP	+	0.5987 (1.0854) {0.0270}	2.5109* (11.087) {0.038}
CCC	+	-0.0085 (0.0023) {0.7165}	-0.002 (0.0329) {0.5048}
APP	+	0.01673* (0.0278) {0.000}	-0.0199 (0.0323) {0.5376}
INVCP	+	0.58191* (0.0328) {0.000}	0.10303* (0.1021) {0.000}
ACP	+	0.1353* (0.0319) {0.000}	-0.0199 (0.0323) {0.5376}
Adj R^2		0.627	0.5246
F-statistic		104.5788	13.2224
P(f-stat)		0.000	0.0213
B-G Autocorrelation Test		1.25	11.68
B-P-G Hetero Test		1.25	11.68
Ramsey Reset Test		0.309	0.0199

Source: Researchers compilation using Eviews 9.0. * sig @ 5%, ** sig @10%. ( ) standard errors, { } p-values

The impact of working capital policy on return on assets is shown in the results above in table 4.2. The R^2 for the aggressive sample is 0.627 which implies that the model explains about 62.7 % of the systematic variations in the dependent variable for aggressive firms. The F-stat is 104.57 (p-value = 0.00) is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. It is also indicative of the joint statistical significance of the model. For the conservative firms the R^2 is 0.5246 which implies that the model explains about 52.46% of the systematic variations in the dependent variable for conservative firms. The F-stat is 13.224 (p-value = 0.00) is significant at 5% and suggest that the hypothesis of a significant linear relationship between the dependent and independent variables cannot be rejected. It is also indicative of the joint statistical significance of the model.

Looking at the working capital variables, for the aggressive sample, we find the coefficient for TCL/TA (AFP) is negative (-1.8959) which suggest that more aggressive financing policy results in lower profitability though not

significant at 5% (p=0.250). A similar outcome is noticed also for the conservative sample where the coefficient is also negative (-9.1529) indicating that increasing conservative financing may also reduce profitability though not significant at 5%. The implication of both outcomes is that it may be more sensible for companies to look at adopting a moderate financing policy which is not too aggressive but not also too conservative. In the case of investment policy (TCA/TA), the estimations reveal that for the aggressive direction, the effect on ROA is positive (0.5987) and significant (p=0.000) at 5% but for the conservative estimations, the effect is also positive (2.5109) and significant (p=0.00). It is observed that the effect is higher for the conservative estimations than the aggressive estimations and thus implies that though aggressive and conservative investment approach influences profitability positively, it may be better to maintain a conservative approach in the long run.

The impact of CCC is not significant for both aggressive (p=0.7165) and conservative (p=0.5048) estimations. The impact of APP is positive (0.01673) and significant (p=0.00) for aggressive and negatively significant for conservative (-0.0199, p=0.5376) estimations. The impact of INVCP is positive (0.58191) and significant (p=0.00) for aggressive and this is also similar for conservative (0.10303, p=0.5376) estimations. The impact of ACP is positive (0.01673) and significant (p=0.00) for aggressive and negatively significant for conservative (-0.0199, p=0.5048) estimations.

4.3. HYPOTHESES TESTING

Decision Rule

We accept the null hypothesis if the probability value for the coefficient beta is > 0.05 at 5% significance level, otherwise we reject the null and accept the alternative

4.3.1.Ho_1: Undue long receivable collection period does not impact significantly on the profitability of quoted manufacturing firms in Nigeria.

The impact of Receivable collection period measured as the average collection period (ACP) on return on assets (ROA) in table 4.4 disaggregated on aggressive and conservative working capital policies reveals that for the aggressive sample, the impact of ACP is positive (0.01673) and significant (p=0.00) for aggressive and negatively significant for conservative (-0.0199, p=0.5048) estimations. Hence the result implies that for firms with aggressive working capital polices willing to take risk, the effect ACP on ROA is positive supporting the a positive risk-return scenario but for conservative firms which are risk averse, their tolerable ACP appears to reduce corporate profitability significantly. In the case of ROE shown in the table 4.5, the impact of ACP is negative (-0.1088) and significant (p=0.00) for aggressive though not significant for conservative (p=0.3093) estimations. Thus again the significance of the relationship is supported for aggressive working capital policy firms but not for conservative firms. For Tobin q, the impact of ACP is negative (-0.0012) and significant (p=0.00) for aggressive and not significant for conservative (p=0.3081) estimations. Thus again the significance of the relationship is supported for aggressive working capital policy firms but not for conservative firms. Therefore, the study rejects the null hypothesis that Receivable collection period does not impact significantly on the profitability of quoted manufacturing firms in Nigeria but goes further to indicate that the extent of this impact varies in direct proportion to whether the firm adopts a an aggressive or conservative working capital policy.

5. SUMMARY OF FINDINGS:

i. The study finds that Receivable collection period does impact significantly on the sustainability of quoted manufacturing firms in Nigeria but goes further to indicate that the extent of this impact varies in direct proportion to whether the firm adopts an aggressive or a conservative working capital policy.

ii. The study finds that there is a significant relationship between inventory conversion period and the sustainability of quoted manufacturing firms in Nigeria.

6. CONCLUSION:

Efficient management of working capital is a fundamental part of the overall corporate strategy to create the shareholders' value. Firms try to keep an optimal level of working capital that maximizes their value. Working capital policy management has become one of the most important issues in the organizations where many financial executives are struggling to identify the basic working capital drivers and the appropriate level of working capital. Efficiency in the management of working capital requires a clear understanding of the economics of trade-off involved in it. Therefore firms try to keep an optimal level of working capital that maximizes their value. The study examines how inefficient working capital management contributed to the failure of major manufacturing companies in Nigeria between 2008 and 2018. In evaluating how inefficient working capital management contributed to the failure of major manufacturing companies in Nigeria, the study employed several measures of profitability such as ROA, ROE and Tobin q. The findings of the study reveals that Receivable collection period does impact significantly on the profitability of quoted

manufacturing firms in Nigeria but goes further to indicate that the extent of this impact varies in direct proportion to whether the firm adopts a an aggressive or conservative working capital policy. Also, the findings of the study show that there is a significant relationship between inventory conversion period and the profitability of quoted manufacturing firms in Nigeria. Hence, inefficient working capital management affects the profitability (return on asset) of manufacturing firms.

7. RECOMMENDATIONS:

Firstly, the study showed that working capital policy has a significant impact on shareholders wealth and hence the study recommends that shareholders should be keenly interested in the working capital policy that a firm adopts. Also, management must endeavor to adopt working capital policies that can improve shareholders wealth.

Secondly, the study showed that Working capital policy has no significant impact on solvency risk. Hence the study recommends that firms should continue to maintain working capital levels at a proportion that is adequately covered by their assets.

REFERENCES:

1. Abbasali, P., Abedi, R. E. and Moein S. (2013). Investigation the effects of working capital management and capital structure on profitability and return on assets: a selection from the automotive companies in Iran. *Journal Basic Applied Science Research*, *3*(4), 847-854.
2. Afza, T. &Nazar, M.S. (2010). Working capital approaches and firms returns in Pakistan. *Pakistan Journal of Commerce and Social Science*, 1, 25-36.
3. Ahmed ET AL. (2017). Impact of working capital management on profitability: a study on Textile companies of Bangladesh. *Journal of Business and Financial Affairs*, *6*(4), 1-7. Doi: 10.4172/2167-0234.1000292
4. Akinyomi, O.J. &Tasie, C. (2012).Effect of working capital management on the profitability of Nigeria manufacturing firms.
5. Akoto, R. K., Vitor, D. A. &Angmar, P. L. (2013). Working capital management and profitability: evidence from Ghanaian listed manufacturing firms. *Journal of Economics and International Finance*, *5*(9), 373-379.
6. Akram et al. (2016). Impact of working capital management on on market returns: a comparative study of Pakistan and Indian chemical sector. *Business Management Dynamics*, *5*(10), 10-25.
7. Akram et al. (2016). Impact of working capital management on on market returns: a comparative study of Pakistan and Indian chemical sector. *Business Management Dynamics*, *5*(10), 10-25.
8. Ani, W. U., Okwo, I. M. &Ugwunta, D. O. (2013). Effects of working capital management on profitability: evidence from the top five beer brewery firm in the world. *Asian Economic and Financial Review*, *2*(8), 966-982.
9. Ani, W. U., Okwo, I. M. &Ugwunta, D. O. (2013). Effects of working capital management on profitability: evidence from the top five beer brewery firm in the world. *Asian Economic and Financial Review*, *2*(8), 966-982.
10. Huynh, N. T. (2012). The influence of working capital management on profitability of listed companies in the Netherlands. *Research in Business Administration*, 1-58.
11. Nguyen, H. C., Tran, M. D. & Nguyen, D. T. (2016). Working capital management and firm's profitability:; evidence from Vietnam's stock exchange. *International Journal of Economic and Finance*, *89*(95), 55-62.
12. Nwude, C. E. (2004). Basic principles of financial management second Edition, Enugu: Chuke Nwabude Nigeria.
13. Ogbeide, D. O. (2017). Recent banking sector reforms and economic growth in Nigeria. *Middle Eastern Finance and Economics*, *8*, 146 - 160.
14. Onwumere, J. U. J., Ibe, I. G. & Ugbam, O. C. (2012). The impact of working capital management on profitability of Nigerian firms: a preliminary investigation. *European Journal of Business and Management*, *14*(15), 192-201.
15. Oyedele, O., Adeniran, O.J. & Oluwatosin, E.O. (2017). Working capital management and financial performance: evidence from Nigeria breweries plc. *International Journal of Innovative Finance and Economic Research*, 5(3), 29-36. www.seahipaj.org
16. Padachi, D. & Howorth, C. (2014). Focus on working capital management practice among Mauritian SMEs: survey evidence and empirical analysis. *Journal of Business Management and Economics*,*5*(4), 097-108
17. Priya, D.P.. (2013). How does profitability get affected b working capital management in food and beverages industry? Of London School Commerce pp. 1-15, online at http://mpra.ub.uni-muenchen.de/50926/

18. Raheman et al. (2010). Working capital management and corporate performance of manufacturing sector in Pakistan. *International Research Journal of Finance and Economic,* 47, 152-163.
19. Ullah, K. (2011). Working capital management and profitability: an analysis of firms of textile industry of Pakistan. Journal of Management Science, *6*(2), 155-165.
20. Vural, G., Sokmen, A. G. and Cetenak, E. H. (2012). Effects of working capital management on firm's performance: evidence from Turkey. *International Journal of Economics and Financial Issues*, *2*(4), 488-495.
21. Warrad, L. (2013). The impact of working capital turnover on Jordan chemical industries profitability.*American Journal of Economics and Business Administration*, *5*(3), 116-119.
22. Weinraub, H. and Visscher, S. (1998). Industrial practice related to aggressive/ conservative working capital policies. *Journal of Financial and Strategic Decision*, *11*(2), 39-46.
23. World Bank (2012) world Bank Development Indicators Washington D. C. www.finance-assignmentr.com theory of working capital management.