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The Impact of Working Capital Management Investments on Firm Performances During and After Financial Crisis

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Abstract

This paper evaluates investments in Working Capital Management (WCM) during and after the financial crisis of 2007 – 2008 to examine the effect of financial crisis on WCM and the performance of firms in Nigeria. It argues that, during the financial crisis, investment in WCM became vulnerable due to liquidity issues compared to the period after the financial crisis. As such, this study uses a sample of 75 non-financial firms listed on the Nigerian Stock Exchange between 2007 and 2015 for examination. The differences between the crisis period (2007 to 2009) and the post-crisis period (2013 to 2015) were understudied through two tests. First, OLS regression analysis was conducted to determine the explanatory and predictive powers of WCM for the two periods via their R^2. Second, a test of difference using the Cramer z – statistics for the two periods was conducted. The findings revealed that the explanatory and predictive power of WCM was greater after the crisis period than during the crisis suggesting that a difference exited between the periods. Further analysis as revealed by the z-score results showed that the differences between the crisis period and the after-crisis period were statistically significance suggesting that a meaningful difference existed between investment in WCM during and after the financial crisis of 2007-2008. These findings enabled the researchers to draw the conclusion that investment in working capital management was significantly affected during financial crisis which consequently leads to low performance. Hence, the findings of this study add to the corpus of literature on WCM and to the practical debate over the effect of financial crisis on WCM efficiency and effectiveness. It also serves as resource guide for managers who make working capital decisions on a daily basis on the need to optimize investment in working capital at all times.

Keywords: Working capital management, financial crisis, Cramer z, firm performance, Nigeria.

1. INTRODUCTION

Despite the consensus that the fiscal crisis of 2007-2008 affected liquidity and Working Capital Management (WCM) of firms which consequently led to their low performance, little effort has been made to determine how WCM was affected during the crisis and after the crisis periods (Ramiah, Zhoa, & Moussa, 2014). Similarly, far little studies have paid attention to the consequential effects of financial crisis on firm performance. The effects of the crisis went beyond financial sectors as banks tightened their credit standards to creating a recessionary effect rippling across the world economy. This is because globalization has integrated most economies of the world, therefore many economies are bound to experience financial crises resulting from the financial

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mismanagement of other foreign economies (Singh & Bhowal, 2012). Such is the experience of Nigeria when the consequences of the global financial crises were gravely felt by the downturn of the Nigerian economy in 2007 to 2008. This paper argues that an understanding of the effect of the 2007-2008 crisis on WCM components during and after the financial crisis will provide a future guide for firms and could mitigate the adverse effects of such economic events in the future.

Several studies have argued that WCM was not given enough attention prior to the period when the crisis erupted. This was because WCM activities such as decisions relating to debtors, creditors and inventory management are daily activities that are inevitable (Singh & Kumar, 2014). Aileman and Folashede (2014) stated that prior to the financial crisis of 2007-2008, WCM was mostly adopted to ensure operational stability and guarantee business survival and was not considered a measure that could provide liquidity in the form of free cash flow, something that abruptly dried up due to the crisis. Suddenly, at the time when firms were unable to borrow as banks tightened their credit standards and the world stock markets declined, more emphasis was placed on WCM. Charitou, Elfanim¸ and Lois (2010) opined that the financial crisis increased focus on the efficient and effective ways of managing the resources of firms that are utilized to generate returns and for sustainability. They further determined that a WCM approach was essential for providing the necessary liquidity to fund firms operating activities, arising from the economic circumstances brought by the financial crisis.

WCM studies have commonly asserted that WCM was affected greatly during the financial crisis and this impact necessitated much attention as a subject of study (Scholleova, 2012; Ramiah et al., 2014; Pirttila, 2014; Wasiuzzaman, 2015). Much agreement exists that the financial crisis affected WCM (Pirttila, 2014; Charitou, et al., 2010) but limited studies have considered analysing the effectiveness of WCM during and after financial crisis by comparing their Adjusted R-squares (Bogstrand & Larsson, 2012) to ascertain the effect of the financial crisis on WCM and firm performance. Thus, it is important to determine the impact of financial crisis on WCM investments and firm performances during and after financial crisis in Nigeria. The remainder of this paper is structured as follows: section two reviews prior literature and develops hypotheses for the paper while section three specifies the methodology adopted to test the various hypotheses formulated. Section four presents and discusses the findings obtained from the empirical analysis while section five summarises the findings and concludes the paper.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The global financial crisis of 2007/2008 delivered negative consequences to the economies of the world (Ramiah et al. 2014), along with several macroeconomic and liquidity consequences. Nobanee and Elli (2015) confirmed that the financial distress occasioned by the global financial crisis has resulted in the increase of research in working capital management. This is because, during a financial crisis, WCM needs and practices will increase thereby requiring additional focus to determine the optimization of its variables. In addition, efficient and effective WCM reduces external financing needs and constraints arising out of the difficulty in assessing external needs at such periods and remains a source of liquidity (cash flow) that is generated at no cost. Put succinctly, Smith (1980), Deloof (2003) and Eljelly (2004) stated that effectively managing working capital variables provides a firm the liquidity needed to finance daily operations, increases profitability and creates more value.

Given these needs, several studies have evaluated how WCM can accelerate the availability of cash flow to improve the liquidity and performances of firms in times of economic distress. For example, Kesimli and Guney (2011) evaluated the impact of the global economic crisis on working capital of the real sector firms in Turkey from 2004 to 2009. The study period was divided into two: 2004 to 2007 was termed the pre-crisis period and 2008 to 2009 was termed the crisis era. Their analysis focused on current assets, liquidity ratio, cash ratio, short term receivables to current asset ratio and current asset to total asset ratio. Others are short term liability to total asset ratio, short term liability to total liability ratio, short term bank loan to short term liability ratio, inventory turnover to current asset ratio and receivables turnover rate and working capital turnover rate. Using the Whitney U test, the study found that the short-term liability to the total asset ratio, the short-term bank loan to short term liability ratio, the inventory turnover to the current asset ratio and receivables turnover rate were affected significantly by the financial crisis, while other variables were not affected significantly. This leads to a conclusion that working capital was affected during the financial crisis. In a similar study, Ramiah et al. (2014) studied WCM during the financial global financial crisis with respect to the Australian experience. They used the survey method and evaluated 1,784 Australian listed firms and 237 CEO Financial and Treasury Association (FTA) members. Their analysis was derived from 173 respondents who participated in the questionnaire and 10 FTA members who were interviewed, focussing on five key elements of WCM (cash, inventory, account receivables debt and risk). Their findings suggest that Australian firms were affected by the crisis, especially in

the area of their liquidity and risk management control. Their findings also revealed that firms changed their WCM policies in a crisis period.

Haron and Nomran (2015) also evaluated the determinants of WCM before, during and after the global financial crisis of 2007-2008 using 57 Malaysian firms. They defined the period 2002 to 2006 as the before crisis period, while 2007 to 2008 was termed the crisis period and 2009 to 2012 was defined as the after financial crisis period. Haron and Nomran used the random effect model to evaluate the common WCM variables such as: profitability, debt, sales growth, free cash flow, firm size and liquidity. Their findings revealed that profitability, debt, sales and firm size significantly affected WCM before and during the financial crisis of 2008 while other variables such as free cash flow and liquidity did not significantly affect WCM before and after the crisis. Furthermore, profitability, firm size, and free cash flow significantly affected WCM during the crisis while debt, sales growth and liquidity were not significant in affecting WCM. From their results, an inference can be made that many variables studied reacted to the different periods differently, but some variables – such as: profitability and firm size were affected at all times. This informed their conclusion that WCM was affected during the crisis and non-crisis periods. The issue is that, none of these studies reviewed evaluated the core WCM variables with reference to their explanatory powers for the different periods as Bogstrand and Larsson (2012) recommended. Furthermore, no additional analysis was conducted to confirm the significance difference between the periods. This, however, constitutes a gap this paper fills. Hence, the following hypotheses are formulated:

H1: There is a significance difference between WCM and ROA during and after the financial crisis of 2007-2008.

H2: There is a significance difference between WCM and TQ during and after the financial crisis of 2007-2008.

3. METHODOLOGY

3.1 Sample Selection and Data

This study adopts a quantitative research method, using the descriptive research design. Data were gathered from the annual financial statements of firms listed on the Nigerian Stock Exchange. A sample of 75 non-financial firms were considered from a total population of 124 non-financial listed firms in Nigeria for the period 2007 to 2015. To enable the study make a comparison between the financial crisis and post crisis periods, the data for this study were divided into the period of 2007 to 2009 as the crisis period and 2013 to 2015 as the post crisis period. The division of periods in this study is corroborated by the studies of Njiforti (2015) and Ramiah, et al. (2014). Thus, the method adopted in this paper is advocated by previous studies and aligns with the objective of this study. As mentioned earlier, the objective is to examine the impact of WCM investments on firm performances during and after the financial crisis. This has become imperative in view of the fact that the financial crisis exerted great pressure on investments in WCM (Ali & Khan, 2011; Mathuva, 2014). This is because sales declined at such periods (Deloof, 2003) and inventories levels were affected (Kontus, 2014). Accounts payable and receivable supply levels similarly declined (Tsuruta, 2013). These made the financing of operational activities difficult due to the reduction in cash flow. Furthermore, the data generated for the variables of interest were winsorized at 3% (Dehnel, 2014). This was done to mitigate the effect of outliers. Consequently, the OLS regression analysis was conducted to determine the difference between the two periods with reference to their R^2s. The OLS regression assumptions were not violated. Because the various assumptions, such as normality, multicolinearity, homoscedasticity and model specification were evaluated. Violations were corrected using the appropriate technique and transformation. The differences between the two periods were later confirmed by comparing their R^2s using the Cramer's z statistics (Cramer, 1987).

3.2 Variables Measurement and Models

This study adopted all the WCM variables used by prior studies. The dependent variables for this study are the Return on Assets (ROA) and Tobin's Q (TQ). ROA is measured in this study as [profit after tax / total assets] while TQ is a measured as [(equity market value + liability book value) / (equity book value + liability book value)]. The independent variables are WCM proxies and are defined as follows: Accounts Receivable Period refers to ARP and was measured as [(account receivable/sales) x 365]. Accounts Payable Period (APP) was measured as [(account payable /purchases) x 365]. Inventory Management (INVM) was determined by [(inventory /cost of sales) x 365]. The Cash Conversion Cycle (CCC) was obtained with reference to [ARP + INVM – APP] while the Cash Conversion Efficiency (CCE) is defined as [cash-flow from operations / sales]. For the control variables: Firm Size (FS) was measured as the natural log of sales. Sales Growth (SG) was

ascertained by [sales$_1$ (this year's sales) – sales$_0$ (previous year's sales) divided by sales$_0$ (previous year's sales)] while the Financial Debt Ratio (FDR) was obtained by dividing total liability by total assets. Arising from these variables, the following models are formulated:

$$ROA_{it} = \beta_0 + \beta_1 ARP_{it} + \beta_2 APP_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 FS_{it} + \beta_7 SG_{it} + \beta_8 FDR_{it} + \beta_9 D1_{it} + e_{it} \qquad (1)$$

$$TQ_{it} = \beta_0 + \beta_1 ARP_{it} + \beta_2 APP_{it} + \beta_3 INVM_{it} + \beta_4 CCC_{it} + \beta_5 CCE_{it} + \beta_6 FS_{it} + \beta_7 SG_{it} + \beta_8 FDR_{it} + \beta_9 D1_{it} + e_{it} \qquad (2)$$

Where D1 is a dummy variable which takes the value of 1 for the periods before crisis and (0) if otherwise. Subscript $_{it}$ represents the panel data notation. i = is the firm (cross-sectional unit). t = is the time period, i.e. from 2007 to 2015 and e = is the error term, while β is the regression slope coefficient.

The results obtained from equation one and two were interpreted by comparing the result of the crisis period and after crisis with reference to their R^{2}s. To confirm whether WCM was affected during the financial crisis, the adjusted R^2 for the after crisis period should be greater than during the crisis. The study employed Cramer's z statistics (Cramer, 1987) to ascertain the significant differences between the two periods (during and after crisis) of the regressions. Cramer's z statistics has been widely used in accounting literature and is computed as follow:

$$z = \frac{\hat{R}^2_1 - \hat{R}^2_2}{\sqrt{Var(\hat{R}^2)_1 - Var(\hat{R}^2)_2}} \qquad (1)$$

$$Var\left(\hat{R}^2\right) \sim \frac{4}{N} \hat{R}^2 \left(1 - \hat{R}^2\right)^2 \left[1 - \frac{2\,(q+1)+3}{N}\right] \qquad (2)$$

Where N is the total sample size and q is number of predictors. $\hat{R}^2 1$ is the adjusted R-squared for regression one and $\hat{R}^2 2$ is the adjusted R-squared for regression two. $Var(\hat{R}^2)_1$ and $Var(\hat{R}^2)_2$ are variance of first and second regressions, respectively.

4. FINDINGS AND DISCUSSION

4.1 Descriptive Statistics

The descriptive statistics presented in Table 4.1 shows that the mean value of ROA was 0.054 while TQ had a mean value of 1.94. These indicate that firms in Nigeria contribute differently to both ROA and TQ thereby making their inclusion in this study worthwhile. The mean value of ARP was 65.8 days and indicates that these firms take approximately 66 days to collect payments from their customers for goods sold on credit. While the APP was 71.4 and revealed that it takes an average of 71 days for firms to pay their suppliers. The inventory of the firms as shown take approximately 100 days to be sold. Table 4.1 also show that the average of CCC was approximately 98 days while CCE was 0.106 per cent.

Table 4.1. Descriptive Statistics

Variable	Mean	Median	Std Dev	Min	Max
ROA	0.0539211	0.0511312	0.0974374	-0.2003407	0.2857245
TQ	1.935865	1.343815	1.511531	0.5261765	6.852686
ARP	65.81284	33.98553	85.91416	1.614762	404.844
APP	71.40689	42.26579	79.66378	1.691966	335.38
INVM	100.0844	82.88017	83.46253	1.989002	358.2027
CCC	98.03848	69.8113	120.9543	-121.1655	469.8565
CCE	0.1064187	0.1023664	0.2442265	-0.6259259	0.7416459
FS	9.878679	9.860165	0.8014258	8.269192	11.26919
SG	0.1325887	0.0856619	0.340373	-0.5409587	1.264393
FDR	0.5731376	0.5613916	0.2724106	0.0767562	1.399866

Table 4.1 also show that the mean of FS was 98 per cent while its standard deviation of 80 per cent shows a wide range spread, meaning that the firms in this study were of different sizes. SG had a mean of 0.13 which indicates that all the firms considered enjoyed an average patronage of about 13 per cent. The FDR had a mean of value of 0.57 indicating that the debt of firms was on average 57 per cent of total assets while the remaining per cent were financed by equity and other forms of trade liabilities.

4.2 Correlation Analysis

For the correlation analysis, a cautious examination of the correlation coefficients for all the variables considered shows that the highest coefficient was 0.6465 which is between CCC and INVM. Such a moderately low correlation suggests that multicollinearity was not an issue in this study. This is because no correlation among a pair of variable exceeds a threshold value of 0.80 to indicate a problem of multicollinearity according to Field (2009). In addition, the study also examined the variance inflation factor in the regression and found a value of less than 2 (though not tabulated). This value was below the threshold value of 10 suggested by Field (2009), hence indicating no severe problem of multicollinearity in this study.

Table 4.2. Correlations between Variables

Variable	ROA	TQ	ARP	APP	INVM	CCC	CCE	FS	SG	FDR
ROA	1.0000									
TQ	0.2514***	1.0000								
ARP	-0.2401***	-0.1169***	1.0000							
APP	-0.1630***	0.0731*	0.4038***	1.0000						
INVM	-0.1442***	0.0321	0.1932***	0.3215***	1.0000					
CCC	-0.1643***	-0.1009***	0.5748***	-0.0958**	0.6465***	1.0000				
CCE	0.1739***	-0.0154	-0.1464***	-0.0270	-0.0624	-0.1222***	1.0000			
FS	0.3264***	0.0624	-0.3244***	-0.2848***	-0.3743***	-0.3418***	0.0189	1.0000		
SG	0.2276***	0.1040***	-0.0680*	-0.0835**	-0.1058***	-0.0960**	-0.037	0.0647*	1.0000	
FDR	-0.2183***	0.1458***	0.0731*	0.0869**	-0.0302	-0.0290	-0.0754*	0.0751*	-0.0259	1.0000

Note: Significance levels are labelled at ***, **, and* for 1%, 5% and 10% respectively.

4.3 The Difference between WCM and ROA during and after the Financial Crisis

This section examines the differences in the relationship between WCM and ROA during (2007 to 2009) and after (2013 to 2015) the financial crisis. Table 4.3 presents the regression results, first with the total sample of the study (675 observations) pooled in a separate regression. Second, the table also included the results of regression during the financial crisis period as defined in the methodology utilizing 225 observations while the third regression results indicating after the crisis period also employs 225 observations. The results of the analysis as shown in Table 4.3 confirm the hypothesis prediction, which states that significant differences would exist in the relationship between WCM and ROA of firms during and after the economic crisis of 2007-2008. The result shows that the post-crisis period provides a more effective influence of WCM on ROA as indicated by the R^2. The R^2 of during crisis regression was 0.2071 which was less than the R^2 of the regression for post-crisis period of 0.3191. The R^2 measures the goodness of fit of a regression. It indicates the percentage of the variance in ROA (the dependent variable) that WCM (independent variables) explain collectively. The difference in the R^2 of the two periods – during and after the financial crisis, is confirmed by the Cramer z-statistics (Cramer, 1987). From the result of the Cramer z-statistics, the z-score of the explanatory power was -2.23 and was statistically significant at 5%. Similarly, the overall value relevance of the regression as indicated in the model's f-value (during crisis = 5.97 and after crisis = 10.45) were all statistically significant at p-values ≤ 0.001.

Table 4.3. Model 1(Test of differences between WCM and ROA during and after the financial crisis of 2007-2008)

Periods	ARM	APM	INVM	CCC	CCE	FS	SG	FDR	R^2
Pooled 2007-2015	0.0002238 (-1.62)	0.0001102 (0.80)	0.0001141 (-0.86)	0.0001262 (0.96)	0.0582955 (3.70)***	0.0371096 (7.73)***	0.0591148 (4.98)***	0.0775056 (-4.81)***	0.2404
During Crisis 2007-2009	0.0001044 (0.42)	0.0000184 (-0.07)	0.0001805 (0.76)	0.00014 (-0.60)	0.0766873 (3.64)***	0.0415102 (4.63)***	0.0561871 (3.29)***	0.0254014 (-1.13)	0.2071
Post Crisis 2013-2015	0.0001917 (-1.14)	0.0000103 (0.05)	0.0001602 (-0.77)	0.0000782 (0.47)	0.0479752 (1.70)*	0.0298579 (4.03)***	0.0481023 (1.86)**	0.0971519 (-3.37)***	0.3191
Z -statistic									- 2.23**

The result confirms the intuitive explanations of differences in WCM often described by previous studies (Ramiah et al., 2013; Wasiuzzaman, 2015; Murthy, 2015). It similarly suggests that WCM is more effective in predicting ROA apparently at a time of macroeconomic stability (the after crisis period). This finding supports the arguments of Wasiuzzam (2015) and Murthy (2015) that WCM gained more interest during the crisis. This is because a crisis period comes with uncertainties ranging from macroeconomic instability to a decrease in bank lending. A crisis period also affects internal WCM components such as accounts payable and receivables and inventory. It causes changes in payment periods and leads to the rationalization of payment terms. This may, in the long term, affect their relationships with suppliers. On the receivable side, it affects collection time and increases amount of bad loans (aging debts). On the inventory level, a crisis period makes purchase of stock difficult and decreases activities level. The sum of these effects negatively affects the effectiveness of WCM

during financial crisis, hence reducing the potency of WCM variables. This can be confirmed looking at the combined explanatory power (R^2) of the pooled regression. The R^2 for the pooled regression was 0.2404, while during and after financial crisis R^2 were 0.2071 and 0.3191 respectively. A critical evaluation shows that the pooled period (2007 to 2015) almost lost its significance as it was less than the short-period of after the crisis (2013 to 2015). This is a clear indication that during a crisis, WCM is greatly affected and requires more attention. Thus, hypothesis 1 which predicted significant differences in the relationship between WCM and ROA is therefore supported.

4.4 The Difference between WCM and TQ during and after the Financial Crisis

In Table 4.3, the study reports the results of differences in the relationship between WCM and TOBINS'Q during and after financial crisis. For the entire sample (2007 to 2015), the R^2 value was 0.0679 while the R^2s for during and post-crisis period were 0.0741 and 0.133 respectively. The increase in R^2 from 0.0741 to 0.133 with a difference of 0.0589 suggests a difference between the two periods. The differences in the two periods as revealed by explanatory powers of the regression were confirmed using Cramer's z-statistics. The Cramer test results provided a z-score of -1.46, which was statistically significant at 10 percent. This result provides support for hypothesis 2, which predicted a significant difference in the relationship between WCM and TOBINS'Q. The argument provided for hypothesis 2 is valid for the findings of this paper. Beyond this argument, other explanations can be offered to uphold this result. In the Nigerian experience, the consequences the financial crisis brought upon firms were multiple. First, the 2007-2008 crisis impacted the financial sector and led banks and other lending institutions to tighten their credit standards thereby making it difficult for firms to acquire credit to support their operation at such critical time. Second, the crisis caused capital erosion as companies holding monetary assets experienced a decline in value or losses while those holding monetary liability gained. Third, the fall in consumer demands arising from economic challenges decreased company's sales and income consequently.

Table 4.4: Model 2 (Test of differences between WCM and TOBIN'S Q during and after financial crisis of 2007-2008)

Periods	ARM	APM	INVM	CCC	CCE	FS	SG	FDR	R^2
Pooled	-0.0035966	0.003097	0.0003907	0.0005945	0.1211822	0.0926519	0.490391	0.8119189	0.0679
2007-2015	(-2.56)**	(2.12)**	(0.22)	(0.41)	(-0.47)	(0.97)	(2.75)***	(3.62)***	
During Crisis	0.0043908	0.0046987	0.0082238	0.0052078	0.0618063	0.0106736	0.4745759	0.8031858	0.0741
2007-2009	(1.10)	(-0.99)	(1.93)*	(-1.26)	(-0.13)	(-0.06)	(1.55)	(2.05)**	
Post Crisis	0.0044276	0.0055089	0.0019262	0.0006884	0.1988008	0.2862215	0.479333	0.9706638	0.133
2013-2015	(-2.73)***	(2.64)***	(-1.09)	(0.50)	(-0.50)	(1.99)**	(1.90)*	(2.86)***	
Z-statistic									-1.46*

These consequences brought by the financial crisis were particularly critical for WCM viability. Apparently, the increased viability of WCM after the crisis period in terms of the explanatory power is justified. The regression model has also shown fitness overall, as the f-value for the pooled, crisis period and post-crisis periods amount to 5.89, 1.96 and 5.49 respectively. The f-values are similarly significant at P-values ≤ 0.05. Arising from these evidences, the study concludes that there is a significant difference in the relationship between WCM and TOBINS'Q during and after financial crisis.

5.   CONCLUSION

This paper examines the difference between investments in WCM during and after the financial crisis of 2007-2008 to shed light on the need for firms to focus attention on the efficient and effective ways of optimizing investment in WCM in normal periods and during a financial crisis. The results presented in this study show that WCM has more explanatory power after the crisis period than during the crisis period. In other words, the results indicate that WCM variables contributed more to the generation of profits in the form of ROA and TQ for the firms in different degrees. This claim is evinced in the results obtained from the regression – as the R^2 s were broadly consistent with the results of the Cramer z-statistics. This is because the z-scores obtained from the Cramer z –statistics were statistically significant for both ROA and TQ models. Thereby indicating a significant difference between investments in WCM during and after the financial crisis.

Overall, the results of this study are consistent with the conclusion often reached by both practitioners and experts that investments in WCM was affected during the financial crisis. This result has important managerial implications for firms and experts since it clears the controversy over whether financial crises affect WCM. Thus, firms operating within Nigeria and beyond should consistently optimize investments in WCM by adopting techniques that reduce excess investments in WCM. Also, continuous forecast of firms' macroeconomic environment is important because it makes firms aware of such occurrences and prepare ways of mitigating the effects of any form of financial crises. Also, cash flow forecasts during normal period and crisis period are vital

for assuring smooth operational activities. This study, however, has certain limitations that can guide future researchers. First, this study only considered the WCM variables in a multidimensional way; hence, future research is encouraged to test and compare using the Cramer z – statistics, the WCM variables (i.e., univariate analysis) to ascertain the effect of a financial crisis on individual WCM variables. Second, the study only evaluated non-financial firms, a consideration of financial firm would also provide interesting findings.

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