

The Relationship between Working Capital Management and Profitability: Evidence from GCC industrial sector

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Abstract This study investigates the relationship between working capital management and profitability of industrial sector companies in Gulf Cooperation Council countries. For every organization, short – term finance and asset management are crucial to meet its day to day needs. This requirement is met by operational working capital management which includes current asset components such as inventories and accounts receivable, and current liability such as accounts payable. If working capital management is designed appropriately and implemented well, it will generate positive returns for the organization. Prior literature has suggested that companies from cross sectional industries apply an aggressive strategy to manage their operational working capital. This would involve shortening the cycle for inventories and accounts receivable and lengthening the cycle for accounting payable. The research selects listed industrial sector companies of GCC countries for a five-year period from 2013 to 2017. Using multiple regression analysis, the findings suggest that there is no significant relationship between profitability and working capital management. In a perfect scenario, optimal working capital might exist, however for the GCC industrial sector they are unable to establish a relationship with profitability.

Keywords —Working capital management, return on assets, industrial sector, Gulf Cooperation Council

I. INTRODUCTION

The growth and sustainability of an organization depends on its ability to effectively manage long – term and short – term assets. However, companies end up emphasizing on long – term investments and assets for major decisions and disregarding short – term assets and liabilities. The current abstruse and tumultuous market dynamics requires a stronger focus on short – term assets and liabilities.

Companies adopt either an aggressive or flexible working capital management (WCM) policy. In an aggressive strategy, companies invest more on non-current assets and little on current assets. The intention is to generate more profits by keeping low levels of cash balances, inventories and granting limited credit to customers. Van-Horne and Wachowicz (2008) suggests that aggressive strategy runs a high risk for the company as funds remain limited to pay off short term debts. Under the flexible approach to working capital management, companies are invested less in non-current assets and more in current assets which have the

possibility of creating value for the company (Nazir and Afza, 2009).

Appuhami (2008) suggests that large investments in current assets has a direct impact on the liquidity and profitability of the firm. If organizations with favorable long- run prospects pursue a nebulous liquidity management process, they can suffer severe challenges and losses due to adverse short – run developments (Richards and Laughlin, 1980).

There is a plethora of research studies that have explored the impact of WCM and profitability. However, there are limited studies that have considered multiple countries. This study provides empirical evidence on the relationship between working capital management and profitability of the Gulf Cooperation Council (GCC) industrial sector companies. The research uses multiple regression analysis for panel data over a sample of 248 firm year observations collected for the period 2013 to 2017.

This research paper is organized as follows: Section 2 provides the literature review associated with the effect of working capital management on profitability. Section 3 discusses the methodology adopted for the research work. Section 4 presents the results obtained and Section 5 elucidates the conclusion and implications associated with the findings of this study.

II. LITERATURE REVIEW

Working Capital Management has been largely acknowledged and considered as an active tool for influencing financial factors and profitability. As specified by Vishnani and Shah (2007), Working Capital Management's strategies and procedures have significant effects on the profitability of an organization.

In order to maximize firm's profitability, working capital management incorporates the optimization of firm's cash, receivables and payables and inventories. (Kaur & Singh, 2013). Most of the organizations make efforts to increase profitability and the cash flow through controlled investment in current assets by adopting strategies for example timely collection of receivables & effective credit policies and instant inventory management. Subsequently, organizations also try to finance their large portion of current assets through current liabilities for example, accounts payable and accruals so that they can reduce the working capital. Due to the impact of current assets or current liabilities on profitability and liquidity, the analysis of current assets or current liabilities is very essential in both credit and profitability analysis (Subramanyam and Wild, 2009, p.223).

Barine (2012) suggested that an increase in Working Capital of an organization will decrease the risk of illiquidity resulting to increase firm's profitability. Also, firm's effective management requires a trade of risk and returns for financial efficiency of firm's activities. It is found by Gill and Biger (2013) that excessive credit sales will affect the company's cash flow and on other hand, suitable credit policies will facilitate in attracting the customers and increase profitability. Whereas, under uncertain market situation, Organizations must ensure to maintain sufficient level of cash to meet day-to-day expenses and simultaneously they must also reduce the cost of holding cash. (Mateut & Zanchetti, 2013).

EMPIRICAL STUDIES

Several researchers provided evidence of the relationship between WCM and profitability. Abuzayed (2012) made an analysis on 52 Jordanian sme's through Cash Conversion Cycle (CCC) and found that profitable firms are less motivated for managing their working capital.

As stated by Wasiuzzaman (2015) in his studies while practicing working capital management in 192 Malaysian

Companies from 1999 to 2008 by applying ordinary least squares regression technique; found that Working Capital considerably increases the business value for financially controlled organizations instead of financially uncontrolled organizations.

While studying WCM, Enqvist, Graham, and Nikkinen (2014) found that working capital management plays a vital role during the time of economic crisis in compared to economic booms. Muscettola (2014) also studied on the impact of CCC on profitability for 4226 Italian manufacturing SME's organizations by adopting an ordinal logistic regression. Muscettola found extensively positive connection between CCC and Firm's profitability.

According to Orobia et al. (2013) in an interview based qualitative approach, ascertain that relationship between WCM and profitability could be moderated by the knowledge, skills & experience of small business owners and respective managers. Makori and Jagongo (2013) evaluated the effect of working capital management on firm's profitability in Kenya. They observed a negative relationship exists between profitability and CCC by making use of correlation and ordinary least squares regression models. Whereas profitability was positively correlated with the inventory turnover period and average payment period.

Orobia et al (2013) is been supported by Banos-Caballero et al (2012) that adopting an effective working capital management by SME's business owners and the managers will develop and improve profitability. Although Banos-Caballero et al (2012) in his analysis on sample Spanish firms found concave relationship and illustrated a decrease in profitability for not maintaining optimal level. Business owners and the Managers must concentrate on the optimal working capital and avoid any major deviations.

While the analysis on the relationship between working capital management and profitability is diverse and unconvincing, the CCC will lead and override theoretical framework to explain the effects of WCM and profitability. Marttonen et al. (2013) in his analysis on the firms based on Bangladesh and Finland found a negative relationship between WCM and profitability.

III. METHODOLOGY

The research uses secondary data collection methods. The data is extracted from the company's annual reports for the period 2013 to 2017. The use of secondary data collection method is useful as it saves on time and effort. In addition, the data required was valuable and valid. Table 1 provides the number of listed industrial companies included in the sample for this study. Companies with incomplete data of the time period were eliminated.

Table 1: Sample of industrial companies selected from the GCC

Countries	Sample
Bahrain	3
Kuwait	9
Oman	24
Qatar	5
UAE	12
Saudi Arabia	21
Total	74

The following research model is used for exploring the relationship between WCM and profitability. Return on assets was used as the dependent variable as the proxy for profitability.

$$ROA_{it} = \beta_0 + \beta_1 CConC_{it} + \beta_2 \Delta GDP_{it} + \beta_3 AGE_{it} + \beta_4 SIZE_{it} + \beta_5 GPM_{it} + \beta_6 Cflow_{it} + \beta_7 Sharh_{it} + \beta_8 SGrow_{it} + \beta_9 Lever_{it} + \beta_{10} CashexF_{it} + \beta_{11} Interexp_{it} + \beta_{12} Country_{it} + \beta_{13} Sector_{it} + \beta_{14} Year_{it} + \varepsilon_{it} \text{ (equation 1)}$$

Variables definition are presented in Table 2. The panel data was analysed using ordinary least squares (OLS) regression in Stata 15.

Table 2: Variable definition

Variable	Title	Formula
ROA	Return on Assets	Earnings before interest and tax divided by total assets
CConC	Cash conversion Cycle	Inventory turnover in days + accounts receivable turnover in days – accounts payable turnover in days
ΔGDP	Gross Domestic Product	Total National Income + Sales Taxes + Depreciation plus + Foreign Factor Income
AGE	Age of the firm	Number of years firm is in existence
SIZE	Size of the firm	Log of market capitalization
GPM	Gross Profit Margin	Gross profit divided by total sales
Cflow	Cash flow	(net profit + depreciation) divided by total assets
SGrow	Sales growth	$(sales_t - sales_{t-1}) / sales_{t-1}$
Lever	Leverage	Loans (short term + long term) divided by total assets
CexF	Cost of external finance	interest paid divided by (average non-current liability + average current liability – average creditors) × 100
Interexp	Interest expense	Principal amount × Interest % × Time period

IV. RESULTS

Table 3 presents the descriptive statistics for the six GCC countries. The average CConC is over 100 days. The ROA of the firms is on an average 3 percent. The SGrow is only about 2 percent over the last five years. On an average, industrial sector companies have been operational for 30 years.

Table 3: Descriptive Statistics of the variables used

Descriptive Statistics for GCC countries					
variable	Mean	Min	P50	Max	SD
CConC	166.24	-143.51	145.42	594.85	124.53
GPM	0.23	-1.92	0.25	0.63	0.29
ROA	0.03	-0.37	0.03	0.19	0.07
Cflow	41.78	-96.80	2.77	581.90	91.63
SGrow	0.02	-0.86	0.01	3.83	0.32
Lever	1.00	-0.67	0.31	47.69	3.63
CexF	0.02	0.00	0.02	0.09	0.02
ΔGDP	-0.01	-0.30	0.02	0.10	0.09
Age	30	0	34	67	14

(variable definition given in Table 2)

The correlation results are not shown for the purpose of brevity. CConC has a positive but weak and significant correlation with ROA. This signifies that larger inventory payable in days and lower accounts payable period have greater profitability for the GCC countries. None of the other variables are correlated to the other variables in the study. The research model does not suffer from any multicollinearity as the independent variables have less than .30 as correlation.

Table 4: Effect of working capital management on return on assets

Regression Analysis for Cash		
Number of obs =	248	
Prob > F =	0	
R-squared =	0.193	
ROA	Coef.	P> t
Constant	7.85	0.335
CConC	0.00	0.013
Lever	0.00	0.962
SGrow	0.01	0.179
Age	0.00	0.15
ΔGDP	0.00	0.248
Cflow	0.00	0.000
Size	0.004	0.111
Interexp	-0.001	0.048
CexF	0.76	0.052
Sector	0.001	0.821
Year	-0.004	0.332

Table 4 presents the regression results obtained after regressing equation 1 to obtain the effect of working capital management on ROA. The model weakly explains the variation is ROA. Though the variable CConC has a significant pvalue its constant offers no direct relationship with ROA. None of the other independent variables reflect an influence on ROA of industrial sector companies of GCC region. It has been suggested in germane literature (Teruel and Solano, 2007; Uyar, 2009) that retail sector tends to have a shorter inventory turnaround time and for manufacturing sector it is longer. Thereby it would be advisable to reduce the cash conversion cycle to improve

profitability.

V. CONCLUSION AND RECOMMENDATIONS

Business find cash conversion cycle as a useful performance measure of liquidity and suggests how well the working capital is being managed. A sample of 74 GCC industrial firms were selected for analyzing the impact of WCM on profitability. In this study, the results show no significant relationship between cash conversion cycle and return on assets for the GCC industrial firms. This is inconsistent with the findings of extant literature that have found a negative relationship between CCC and profitability (Falope and Ajilore, 2009; García-Teruel and Martínez-Solano, 2007)

The findings of this research direct towards policy implications. Policy on working capital management should be a concern for every company. Managers should make an effort to reduce the cash conversion cycle to improve profitability of the firm.

The main limitation of this research is exploring the relationship over only a five-year period. The industrial sector companies chosen are only a subset of the population. It would be worth including all the companies classified in the industrial sector.

Future research can be directed to including different institutional characteristics while exploring the relationship between WCM and profitability. Other proxies of profitability can also be used to investigate an alternative impact. In addition, further studies can incorporate managers sentiment for understanding the WCM policies being adopted in the GCC.

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