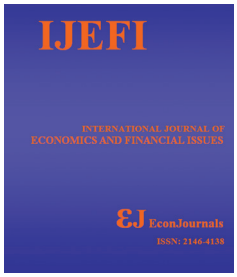

International Journal of Economics and Financial Issues

ISSN: 2146-4138

available at http: www.econjournals.com

International Journal of Economics and Financial Issues, 2016, 6(3), 1136-1142.

Impact of Working Capital on Financial Performance of Gulf Cooperation Council Firms

Sumathi Kumaraswamy*

Department of Economics and Finance, College of Business Administration, University of Bahrain, Kingdom of Bahrain.
*Email: skumaraswamy@uob.edu.bh

ABSTRACT

As an extension of prior literatures that proved the relationship between working capital and firm performance, the present study aims to explore the impact of working capital on the firm performance of cement manufacturing Gulf Cooperation Council (GCC) firms for a period of 2008-2014. Four hypotheses pertaining to working capital components were investigated using linear regression models. The study identified positive relationship between inventory conversion period, average payment period with profitability and a negative relationship amid average collection period and firm profitability. The result of regression model indicates average collection period and inventory conversion period to be the most significant factors followed by average payment period. It shows that the profitability of the GCC cement manufacturing firms are greatly influenced by the average collection period and high inventory levels.

Keywords: Working Capital, Profitability, Gulf Cooperation Council, Average Collection Period, Inventory Conversion Period, Average Payment Period
JEL Classifications: M1, M4

1. INTRODUCTION

The world of high competitive business environment compels the firms to frequently revamp their financial strategies and polices for their survival, sustainability and growth. Studies in corporate finance have predominantly examined long-term financial decisions especially capital structure, dividend theory and firm valuation. Long term financial decisions focus on future cash flows, discounted by cost of capital determine the market value of a firm. However, such long-term decisions will only result in the expected benefits for a company if attention is also paid to short-term decisions regarding current assets and liabilities. Effective and efficient management of current assets and current liabilities with maturities of 1 year or less impacts the firm value. Current assets comprise of cash, inventory (raw materials, work in progress and finished goods), account receivables and short term investments. Current liabilities include accounts payable, short term loans and bank overdrafts. The difference between current assets and current liabilities is represented as net working capital. Any increase in working capital represents an investment that reduces the cash that is available to the firm. The valuation principle tells us that the value of the firm is the present value of its free cash flows. Therefore, working capital alters a firm's value by affecting its free cash flows.

Working capital management (WCM) which involves the management of current assets and current liabilities with two main objectives, increasing firm profitability and liquidity. Effective and efficient management of working capital is of paramount importance to firms due to its major significance on firm's profitability and liquidity. It minimizes the opportunity costs associated with investing in inventories and accounts receivable and from holding cash. Excess funds invested in these accounts could instead be used to pay down debt or returned to shareholders in the form of a dividend or share repurchase. Higher accounts receivable days may signal that the firm is having trouble in collecting from its customers and low accounts payable days might suggest it is not taking full advantage of opportunities to delay payment to suppliers. Finally, high inventory days would focus a manager on why the firm needs to have its inventory on hand so long before its sells the product. Apparently, firms needs to keep an eye on each of the components because they all contain valuable information about how efficiently the firm is managing its working capital.

2. COMPONENTS OF WORKING CAPITAL

2.1. Inventory Conversion Period (ICP)

Inventory consists of the firm's stock of raw materials, work in process and finished goods. Inventory as one of the major component of WCM is a crucial concern for firms because of the large investment involved. Firms strive to maintain optimal inventory levels to avoid potential major losses in asset values and to increase firm profitability. The smaller level of inventory needed to support the firm's sales, the faster the total asset turnover and higher the return on total assets. Rapid inventory turnover also reduces the potential obsolescence and resulting price concessions. On the other hand, small inventories reduces the firm's short term financing requirements and thereby lower financing costs and improve profits. The inventory conversion period is the average time taken to use up raw materials, plus the average time taken to convert raw materials into finished goods, plus the average time taken to sell finished goods to customers.

2.2. Average Receivable Collection Period (ACP)

Account receivable as one the three variables in cash conversion cycle (CCC) represented as the average collection period result from a company selling its products or services on credit. This period is the average length time form a sale on credit until the payment becomes usable funds for the firm. ACP involves managing the credit available to the firm's customers, and also in receiving, processing and collecting payments. Setting credit standards enables effective management of credit and accounts receivable process. This process involves applying techniques for determining which customer should receive credit and how much credit should be granted. Relaxed credit standards generally yield increased sales and additional profits, whereas tightened credit standards reduce investment in accounts receivable and thus lowered sales and profit.

2.3. Average Accounts Payable Period (APP)

The APP is the average time taken by a company to pay its trade payables, i.e., its suppliers. Similar to accounts receivable firms need to monitor accounts payable to ensure that it is making its payments at an optimal time. Firms follow strategies like stretching the accounts payable to reduce the direct cost of trade credit as it lengthens the time that a form has use of funds (Berk, 2014). A firm's refined accounts payable process would enhance the firm's future cash flow forecasts and thereby helps the firm to improve its liquidity, strengthen its working capital, mitigate potential funding gaps and realize higher profits.

2.4. CCC

The elapsed time between the points at which a firm pays for raw materials and at which it receives payment for finished goods is called the CCC (Megginson et al., 2010). The CCC, which represents the interaction between the components of working capital and the flow of cash within a company, can be used to determine the amount of cash needed for any sales level. The length of the CCC depends on the length of ICP, ACP and APP. The longer the CCC, the greater the amount of investment required in working capital (Singh and Kumar, 2014). If the firm pays cash for its inventory, this period is identical to the firm's operating cycle. However most of the firms buy their inventory on credit, which reduces the amount of time between the cash investment and the receipt of cash from that investment. In order to maximize shareholder value, the firm should manage the short term activities in a way that shortens the CCC, which will enable the firm to operate with minimum cash investment. The firm can find alternative uses for any cash that it is not using to fund the CCC like suing the cash to pursue more productive long term investments, using it to pay down expensive long term financing or distributing it to the owners as dividends. A positive CCC means that trade credit does not provide enough financing to cover the firm's entire operating cycle. In such circumstances, the firms seek other forms of financing like bank lines of credit and term loans. However the cost of these financing sources tend to be higher that the costs of trade credit. Apparently the firm will benefit by findings ways to shorten its operating cycle or lengthen its payment period. As a measure of the cash cycle, CCC is calculated as the sum of a firm's inventory days and accounts receivable days, less its accounts payable days.

3. REVIEW OF RELATED LITERATURE

Traditional liquidity management theories were based on current and quick ratios as measures of a firm's liquidity position. Nevertheless, the static nature of these ratios forged several authors like Largay-Stickney Aziz-Lawson to catechize its suitability for firms' liquidity analysis. Eventually several other authors suggested CCC as another liquidity measure. The issue of a CCC was initially presented by Hager in 1976 (Lyroudi, 1993) postdated by Richards and Laughlin (1980) suggested that incorporating accounts receivable and inventory turnover measures into an operating cycle concept provides more appropriate view of liquidity management as compared to the solvency indicators, current and quick ratios. During the same period, a cash cycle analysis was introduced by Nordgen (1981), followed by Gitman (1982) based on the asset conversion and the liability cycle. Gentry et al., developed a weighted CCC (WCCC) to take into account both the timing of the flows and the timing of funds used in each segment of the cycle. The WCCC measured the weighted number of days funds are tied up in receivables, inventory and payables, less the weighted number of day's cash payments are deferred to suppliers.

Eventually, a number of empirical studies on CCC on large US firms were initiated by Belt (1985), Besley and Meyer (1987) except Lyroudi and McCarty (1993) focused on small business firms investigated the implications of the CCC for small businesses in terms of profitability and liquidity. Several tests were performed by these authors to examine the empirical relationship of the CCC and current-quick ratios; the empirical relationship of CCC and its components; the empirical relationship of CCC, current-quick ratios with the profitability ratios of net profit margin, return on investment and return on equity; and finally, the size effect on the firm's liquidity. The results indicated differences between the concept of CCC in manufacturing, retail, wholesale and service industries. Overall, the CCC was negatively related to the current ratio (CR), although not statistically significant, to the inventory conversion period, and to the payables deferral period,

but positively related to the quick ratio and to the receivables conversion period. Similar research findings were discerned by Lyroudi and Lazarid (2000). The study examined the CCC as a liquidity indicator of the food industry Greek companies found positive but insignificant relationship with ROI and ROE.

At the outset of 21st century, Deloof's (2003) work reconnaissance the relation between WCM and corporate profitability for a sample of 1,009 large Belgian non-financial firms for the 1992-1996 period. Number of day's accounts receivable, inventories and accounts payable are used as measures of trade credit and inventory policies. The CCC is used as a comprehensive measure of WCM. The study identified that the CCC and its components are negatively correlated with the Gross operating income. The results of regression analysis found very significant relationship between gross operating income and the number of days of accounts receivable, inventory and accounts payable. Number of days of accounts receivable showed a high significant relationship whereas CCC negative relationship was not significant with gross operating profit.

As most of the studies are targeted towards specific group of industries or a specific market, a study of Filbeck and Kreugar (2005) examined the working capital efficiency between industries across time discovered that working capital change significantly within industries across time.

An contradictory findings to Deloof's study was reported by Makori and Jagongo's (2013) study on manufacturing and construction firms listed on Nairobi securities exchange, Kenya. A balanced panel data analysis of 100 firm year observation in their study found negative relationship between profitability and number of day's accounts receivable and CCC, but a positive relationship between profitability and number of days of inventory and number of day's payable.

Mathuva (2014) also conducted a similar study on non-financial firms in Kenya revealed that older firms and firms with more internal resources maintain longer CCC. The results of the study showed that higher return on assets, investment in capital expenditure and growth opportunities have a significant negative association with the CCC whereas a significant positive association is observed between inflation and the CCC. An interesting findings of this study is that CCC is not only influenced by internal firm specific factors, but also by an external, economy wide factor, inflation.

The research works on WCM practices and firm performance on Pakistan context by Attari and Raza (2012), Majeed et al. (2012) identified significant negative relationship between two profitability variables ROA, ROE and operating profit. Majeed et al., in examining the relationship between CCC and its explanatory variables found CCC and Average collection period significantly influence the firm profitability. Similar findings were obtained by Attari and Raza, a significant negative relationship between CCC and firm profitability. The former study proxy three profitability measures, ROA, ROE and operating profit, whereas firm size and total assets were used as profitability measure for the latter.

The relationship between CCC and financial characteristics of industrial sector of Amman stock exchange (Jordan) analyzed by Al-Shubiri and Aburumman (2013) found statistically significant and positive relationship between CCC and independent study variables; debt, market, productivity, liquidity and dividends indicator.

Similar study by Marttonen et al. (2013) also identified a strong effect of the CCC on the ROI on industrial maintenance service sector, arising from light fixed assets and good profitability. Interestingly, the study identifies that the CCC is notably shorter in large Finnish maintenance service enterprises than in small and medium-sized enterprises (SMEs) of the same industry. This means that changes in the CCC have a much more extensive impact on the ROI in large maintenance service providers. The difference between large enterprises and SMEs can be explained through both fixed assets- and working capital-related economies of scale, and the fact that large maintenance service providers often focus on providing services mostly for their host companies. The changes of the EBITDA% affect ROI so much that compensating them with the management of the cycle times of working capital is unrealistic in maintenance service companies. Especially in large enterprises the CCC cannot be shortened. However, the large enterprises seem to have a competitive advantage over the SMEs due to lower fixed assets ratios.

In a recent study by Pais and Gama (2015) on Portuguese SME used to model a sample of 6,063 Portuguese small and medium-sized firms SMEs, covering a time period 2002-2009 indicate that a reduction in the inventories held and in the number of days that firms take to settle their commercial liabilities and to collect payments from its customers are associated to higher corporate profitability. Similar results are obtained when industry-specific effects are controlled, supporting the robustness of the previous analysis. The relevance of quadratic dependences of the profitability on some variables was also identified and suggests a decreasing trend of return on assets with increasing values of the WCM characteristic variables.

Multifarious research works on WCM in Indian context has been overseen by many authors; Bardia (2004), Suraj (2010), Vijayakumar (2011), Vaidya (2011), Panigrahi (2013) and Sharma (2013), Bagchi and Khamrui (2012), Sarbapriya (2012), Sharma and Kumar (2016), Madhavi (2014), Gumber and Kumar (2012), Shrof (2014), Barot Haresh (2012), Monika Maheshwari (2014), Goel and Sharma (2015) highlights the significance of WCM in general and CCC in particular. It is evident from the prior studies that significant difference exist between working capital measures across different countries.

3.1. WCM in Gulf Cooperation Council (GCC)

Most of the previous studies on WCM focused on European and Asian markets and only a handful of research works have been managed by authors in GCC region. GCC, political and economic alliance of six Middle Eastern countries-Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman is one amongst the fastest growing economies in the world, mostly due to a boom in oil and natural gas revenues coupled with a building and investment boom backed by decades of saved petroleum revenues.

A study by Naser et al. (2013) tried to identify the factors that influence corporate WCM on non-financial companies listed on Abu Dhabi Securities Exchange by resorting CCC as a proxy to WCM. The factors sales growth, size and the level of corporate leverage had an significant influence on the WCM of the firms selected for the study.

Almazari (2013) investigated the relationship between the WCM and the firms' profitability for the Saudi cement manufacturing companies by employing linear regression tests confirmed a high degree of association between the two. The study highlighted the CR as the most important liquidity measure which effected the profitability of Saudi cement firms. The firms experienced increase in profit with an increase in the size of the firm, but with increased debt, the firm's profitability reacted negative.

An attempt by Murthy (2015) looked into the impact of level of working capital on a firm's financial performance of 153 large manufacturing firms operating in the six GCC Countries. Pre-tax return on assets (ROA-profit before tax divided by total assets) is used to measure corporate financial performance and a number of control variables including firm size, gross margins, and age of the firm are used in the regression analysis. The study concluded that the performance is strongly influenced by levels of accounts receivables; however inventory levels and payables have no impact on performance.

4. HYPOTHESIS DEVELOPMENT, DATA AND METHODOLOGY

In this study we examine the predictability of working capital components on firm profitability by testing the five developed hypotheses:

H1: There is no significant relationship between CCC and firm profitability

H2: There is no significant relationship between ICP and firm profitability

H4: There is no significant relationship between ACP and firm profitability

H4: There is no significant relationship between APP and firm profitability.

4.1. Research Sample Collection

Financial data for this present study has been gathered from the cement industries listed on the Stock exchanges of Saudi Arabia, Abu Dhabi, Kuwait, Sultanate of Oman and Qatar. The financial data of the firms listed on the GCC stock exchanges are collected through Thomson Reuters Database. The financial data collected and analyzed covers a period of 7-year from 2008-2014. A sample of 20 Industries have been selected for the study for the reason of data availability.

4.2. Definition of Dependent and Independent Variables

As it is evident from the prior studies that significant difference exist between working capital measures across different countries, an further investigation under different settings would better generalize the results for future propositions. The present study also aims to explore the relationship between CCC and firm profitability by using EBITDA margin as dependent variable and CCC, inventory conversion period, average accounts collection period and average accounts payables period as independent variables and CR and fixed asset turnover (FATR) as control variables. Definitions of variables employed in the analysis is presented in Table 1.

4.3. Research Model

Based on the previous literatures, the research model is developed that is similar to Makori's (2013) study to test the hypotheses developed so far. The core components of working capital are modeled with the profitability measure along with the other two control variables. Linear regression technique is employed to identify the most significant component of working capital contributes most in predicting the firm profitability and to test the developed hypotheses using the models:

EBITDA = f (ACP, ICP, APP, CCC, CR, FATR)

Model 1: $EBITDA=\beta_0+\beta_1 ICP_{it}+\beta_2 CR_{it}+\beta_3 FAT_{it}$

Model 2: $EBITDA=\beta_0+\beta_1 ACP_{it}+\beta_2 CR_{it}+\beta_3 FAT_{it}$

Model 3: $EBITDA=\beta_0+\beta_1 APP_{it}+\beta_2 CR_{it}+\beta_3 FAT_{it}$

Model 4: $EBITDA=\beta_0+\beta_1 CCC_{it}+\beta_2 CR_{it}+\beta_3 FAT_{it}$

Model 5: $EBITDA=\beta_0+\beta_1 DSO_{it}+\beta_2 DIO_{it}+\beta_3 DPO_{it}+\beta_4 CR_{it}+\beta_5 FAT_{it}$

From first regression model through three, the three components of working capital, ICP, ACP, and APP are regressed separately with the profitability measure, EBITDA. Model 4 regresses CCC against EBITDA. All the three working capital measures are regressed jointly with profitability measure EBITDA excluding CCC due to the presence of multicollinearity which in turn may affect the predictability of the estimates. Subscripts i denote firms (cross-section dimensions)ranging from 1 to 20, t denotes years (time-series dimensions) ranging from 1 to 7, ε is the error term of the model and β0, β1, β2, β3, β4, β5=Regression model coefficients.

Table 1: Definition of proxy variables

Factor	Abbreviation	Measurement
Profitability	EBITDA	EBITDA margin=Earnings before interest, depreciation and amortization/total revenue
Inventory conversion period	ICP	Inventory*365/cost of sales
Average collection Period	ACP	Accounts receivable*365/net sales
Average payment period	APP	Accounts payable*365/purchases
CCC	CCC	ICP+ACP−APP
CR	CR	Current assets−current liabilities
Fixed asset turnover	FATR	Sales/fixed asset

CR: Current ratio, ICP: Inventory conversion period, ACP: Average receivable collection period, APP: Average accounts payable period, CCC: Cash conversion cycle, FATR: Fixed asset turnover

5. EMPIRICAL ANALYSIS

The empirical results derived from quantitative data analysis using Statistical Package for Social Sciences (SPSS) are presented in this section. Results of descriptive analysis is presented in Table 2 followed by the Pearson's correlation, variance inflation factor (VIF) and regression analysis in the consecutive tables.

5.1. Descriptive Statistics

Descriptive analysis portrays the mean, standard deviation, minimum and maximum values of the dependent and the independent variables used in the regression model. Table 2 represents the summary statistics of all variables used in the analysis.

From Table 2, the following remarks can be stated:

The average EBITDA for the sample firms shows at 36.16% with a standard deviation of 26%. On average it takes 158 days for the firm to convert the inventory to sales, 69 days to collect receivables and make payments in 47 days. The CCC depicts that it takes 180 days before cash is collected from sales measured from when the inventory is actually paid for the firms.

5.2. Pearson Correlation Analysis

Pearson correlation is employed to explore the strength of the relationship between dependent variable (EBITDA) and independent variables (ICP, APP, ACP) and CR, FATR as control variables using the SPSS. In addition, Pearson correlation is used to detect the multicollinearity between the independent and control variables of the study.

From Table 3, it is evident that strong and significant relationship exists between EBITDA, ACPICP and FATR. It is also clear that most of the variables are not strongly self-related except a very strong correlation exists between the independent variables ICP and CCC which indicates the presence of multicollinearity as suggested by Farrar and Gluber (1967) and Judge et al. (1985) multicollinearity exists when correlation coefficient exceeds 0.80. To increase the precision of the estimated regression of the models, ICP and CCC are separately regressed and not together in the estimated models.

The negative relation between EBITDA and ACP is compatible with the view that rapid collection of receivables from customer increases the firm's cash flow to replenish the inventory to increase sales which would eventually boost firm profitability. In case of the negative relationship between EBITDA and APP is consistent with the viewpoint that as stated earlier, stretching the accounts payable reduce the direct cost of trade credit as it lengthens the time that a firm has the use of funds. The funds thus can be utilized to increase the inventory levels to improve sales and realize higher profits.

The positive relationship between EBITDA, ICP can be explained by the fact that rapid inventory turnover reduces the potential obsolescence and resulting price concessions. Apparently, the firms are protected against price fluctuations. The correlation table reveals a positive relationship between EBITDA and CCC can be supported with the argument that more profitable firms are realizing longer conversion cycle indicating that these firms are less efficient in managing their working capital. This results is consistent with Shin and Soenen (1998) and Lyroudi and Lazaridis (2000) and Abuzayed (2012).

5.3. Regression

In order to test the developed hypotheses, Linear regression analysis has been performed to identify the most significant component of working capital contributes most in predicting the firm profitability. The results of the models tested in the study are shown in Table 5. With the purpose of measuring the

Table 2: Descriptive statistics of the dependent and independent variables

Variables	EBITDA	ACP	APP	ICP	CCC	FATR	CR
Mean	0.361564	69.4400	47.2743	158.0921	180.2557	1.7165	3.3519
Median	0.389000	67.8000	38.8000	148.9500	176.4500	0.7350	2.9150
Standard deviation	0.2601852	39.61628	37.64925	88.43032	93.52157	3.58333	2.18632
Variance	0.068	1569.449	1417.466	7819.922	8746.284	12.840	4.780
Skewness	−0.823	0.917	2.034	0.549	0.564	4.445	1.369
Kurtosis	0.823	1.547	6.421	−0.247	0.248	22.281	2.232
Minimum	−0.5570	5.70	0.00	11.40	5.80	0.07	0.53
Maximum	0.7270	224.00	235.30	416.10	494.10	26.68	12.77

Source: 2008-2014 Data, SPSS Output. CR: Current ratio, ICP: Inventory conversion period, ACP: Average receivable collection period, APP: Average accounts payable period, CCC: Cash conversion cycle, FATR: Fixed asset turnover

Table 3: Pearson bivariate correlation coefficients

Variables	EBITDA	ACP	ICP	APP	CCC	FATR	CR
EBITDA	1.000	−0.767**	0.358**	−0.012	0.019	−0.234**	−0.095
ACP	−0.767**	1.000	−0.212*	0.108	0.179*	0.032	0.158
ICP	0.358**	−0.212*	1.000	0.038	0.840**	−0.419**	−0.292**
APP	−0.012	0.108	0.038	1.000	−0.321**	−0.08	−0.339**
CCC	0.019	0.179*	0.840**	−0.321**	1.000	−0.351**	−0.072
FATR	−0.234**	0.032	−0.419**	−0.08	−0.351**	1.000	0.417**
CR	−0.095	0.158	−0.292**	−0.339**	−0.072	0.417**	1.000

**Correlation is significant at the 0.01 level (two-tailed), *Correlation is significant at the 0.05 level (two-tailed).Source: 2008-2014 Data, SPSS Output. ACP: Average receivable collection period, APP: Average accounts payable period, CCC: Cash conversion cycle, FATR: Fixed asset turnover

multicollinearity effect among independent variables included in the models with reference to dependent variable, and VIF statistics was calculated and presented in Table 4.

The estimated VIF values for each of the explanatory variables are relatively small as shown in Table 4. The highest VIF is 1.446 in Model 5, which is much lower than the maximum level of VIF at 4 and 5 (Rogerson, 2001 and Pan & Jackson, 2008). It is evident from the Tables 3 and 4 that the statistics are within the limit, it indicates the absence of multicollinearity in the models.

5.4. Results of Model 1

This model includes ACP as independent variable along with two control variables and tests the hypothesis that there is no significant relationship between ACP and profitability. The regression F-value at 83.23 evidence that it is highly significant, and thus the null hypothesis is rejected.

It can be concluded that ACP is a significant factor in predicting the firm profitability. The adjusted coefficient of determination in this model indicates that 64% of the variation in the profitability is explained by variations in ACP. Furthermore the model identifies a negative relationship between ACP and profitability indicating that rapid collection of receivables from customer increases the firm's cash flow to replenish the inventory to increase sales which would eventually boost firm profitability of Cement Manufacturing Industries in GCC. This showcase that the Cement Manufacturing firms in GCC effectively manage their ACP to increase profitability. This result is in consistent with Deloof (2003), Pais and Gama (2015), Majeed et al. (2012), Mathuva (2010) and differs from Sharma and Kumar (2011), Lyroudi and Lazaridis (2000), Abuzayed (2012), Murthy (2015) found a positive relationship between ACP and profitability.

Table 4: VIF

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
ACP	1.027				1.103
ICP		1.238			1.290
APP			1.366		1.173
CCC				1.149	
CR	1.242	1.235	1.366	1.220	1.446
FATR	1.212	1.371	1.217	1.384	1.394

Source: 2008-2014 Data, SPSS Output. CR: Current ratio, ICP: Inventory conversion period, ACP: Average receivable collection period, APP: Average accounts payable period, CCC: Cash conversion cycle, FATR: Fixed asset turnover, VIF: Variance inflation factor

5.5. Results of Model 2

The second model tests the hypothesis that there is no significant relationship between ICP and profitability. Similar to Model 1, the same variables are used, except ACP which has been replaced with ICP. The estimated result for adjusted R^2 at 0.120 and regression F at 7.316 shows the Model 2 is statistically significant, thus the hypothesis is rejected. The regression results depicts that there is a significant positive relationship between ICP and profitability. It can be concluded that increased inventory levels is linked with increasing sales and eventually would increase firm profitability. This result is compatible with similar studies of Abuzayed (2012), Lyroudi and Lazaridis, (2000) and Makori and Jagongo (2013). Whereas contradicts the results with García-Teruel and Martínez-Solano (2007) and Raheman et al. (2010). The results depict the cement manufacturing firms in GCC maintain high levels of inventory and thus reduces the cost of possible interruptions in the production process and the loss of business due to scarcity of products. According to Blinder and Macciri (1991)maintaining high level of inventory help the firms in reducing the cost of supplying the products and protests the form against price fluctuations as a result of adverse macroeconomic factors.

5.6. Results of Model 3

In order to test the effect of APP on firm profitability, model 3 is constructed and the results of regression of this model is shown in Table 4. The structured hypothesis that there is no significant relationship between APP and firm profitability is tested through this model. The estimates of the model shows that the coefficient of APP is negative with -0.379, but it is not statistically significant from zero. Hence, the hypothesis is accepted and can be concluded that APP is a not a significant factor that should be considered in increasing firm profitability for Cement manufacturing firms in GCC. The result is consistent with Almazari (2013) study on Saudi Cement Companies who found a negative and insignificant relationship between APP and profitability.

5.7. Results of Model 4

Model 4 tests the hypothesis that there is no significant relationship between CCC and profitability. Similar to previous Models 1-3, one dependent variable CCC is regressed along with two control variables to predict the firm profitability. The estimate of the model

Table 5: Results of regression

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
R^2	0.647	0.139	0.056	0.060	0.678
Adjusted R^2	0.64	0.120	0.035	0.039	0.666
Regression F	83.23	7.316	2.687	2.873	56.432
Significance	0.000**	0.000**	0.049**	0.039*	0.000**
Constant	21.972 (0.000)**	3.287 (0.001)**	7.063 (0.000)**	7.040 (0.000)**	10.623 (0.000)**
ACP	−15.116 (0.000)**				−14.973 (0.000)**
ICP		3.643 (0.000)**			2.836 (0.005)**
APP			−0.379 (0.705)		2.199 (0.030)*
CCC				−0.819 (0.414)	
CR	2.465 (0.015)	0.556 (0.579)	−0.092 (0.927)	0.109 (0.913)	3.458 (0.001)**
FATR	−4.776 (0.000)**	−1.285 (0.201)	−2.539 (0.012)	−2.701 (0.008)**	−3.788 (0.000)**

**Significant at the 0.01 level, *Significant at the 0.05 level. CR: Current ratio, ICP: Inventory conversion period, ACP: Average receivable collection period, APP: Average accounts payable period, CCC: Cash conversion cycle, FATR: Fixed asset turnover

identifies a negative relationship between CCC and profitability for GCC Cement manufacturing firms, indicating the rule of the thumb on CCC, the lesser the CCC, the greater the firm profitability, identical to the outcomes of Pais and Gama (2015), Upadhyay and Smith (2015) Vijayakumar (2011), Nobanee and Al Hajjar (2011), Anser and Malik, (2013). Although the overall estimation of the model is significant, the variable CCC is not statistically significant in predicting the profitability.

5.8. Results of Model 5

In this model, all the three components of CCC is regressed to identify their relative predictability to firm profitability. Three dependent variables ACP, ICP and APP is regressed in this control model to identify the most significant variables that predicts the profitability of GCC firms that manufactures cement. The estimated results for adjusted at 66.6% shows that the model has high explanatory power compared to other models. The regression F value at 56.43 evidence that the model is highly significant at 1% level. All the variables included in the model are significant at 1% level except APP (significant at 5%). This result is consistent with the results of Makori and Jagongo (2013) who found positive relationship between ICP, ACP with profitability and a negative relationship amid ACP and profitability. In nut shell, it can be concluded that, the profitability of the GCC cement manufacturing firms are greatly influenced by the average collection period and high inventory levels.

6. CONCLUSIONS AND FUTURE RESEARCH

The main goal of the paper is to examine the relationship between the core components of WCM with profitability and to identify the most influential factor that predicts firm profitability using the data from 20 Cement manufacturing firms from GCC. The result of regression model identified that ACP and ICP to be the most significant factors followed by APP. In other words, it can be concluded that, the profitability of the GCC cement manufacturing firms are greatly influenced by the average collection period and high inventory levels. The findings is consistent with the study of Murthy (2015) highlighted that accounts receivable have a strong negative impact on profitability of GCC companies. The findings of the study also can be substantiated by a report published by Strategy and PWC highlighting that "Saudi companies have traditionally not focused on generating cash from operations." They have therefore kept high levels of inventory and receivables compared to global benchmarks. Although part of this issue is structural in nature given the procurement practices in the country, there is still room for improvement. The current liquidity crunch demonstrates how hazardous this practice can be. "Inventory and receivables for the companies we analyzed reached 40 billion SAR at the end of fiscal year 2008; although high payable levels dampened the negative financial impact of high inventory and receivable levels, companies' working capital remained high compared to benchmarks across most industries." The results imply that profitability of the GCC firms can be increased substantially by effective receivables and inventory management.

Based on the empirical findings of this research paper, it can be concluded that further research would be desirable. Further research studies can be extend with more sample firm with extended time period with different geographical locations. Moreover, the findings of the study may not be generalized to other countries due to nature and size of business, production and credit policies, rate of growth in business, price level changes and similar other factors. Finally, the study is not free from limitations. The sample size of the study is limited to 20 cement manufacturing firms in GCC and only the most significant factors that affect variables firm profitability is considered.

REFERENCES

Almazari, A.A. (2013), The relationship between working capital management and profitability: Evidence from Saudi cement companies. British Journal of Economics, Management and Trade, 4(1), 146-157.

Al-Shubiri, F., Aburumman, N. (2013), The relationship between cash conversion cycle and financial characteristics of industrial sectors: An empirical study. Investment Management and Financial Innovations, 10(4), 95-102.

Anser, R., Malik, Q.A. (2013), Cash conversion cycle and firms' profitability – A study of listed manufacturing companies of Pakistan. IOSR Journal of Business and Management, 8(2), 83-87.

Attari, M., Raza, K. (2012), The optimal relationship of cash conversion cycle with firm size and profitability. International Journal of Academic Research in Business and Social Sciences, 2(4), 189-203.

Aziz, A., Lawson, G. (1989), Cash flow reporting and financial distress models: Testing of hypotheses. Financial Management, 18, 55-63.

Abuzayed, B. (2012), Working capital management and firms' performance in emerging markets: The case of Jordan. International Journal of Managerial Finance, 8(2), 155-179.

Bagchi, B., Khamrui,B. (2012), Relationship between Working Capital Management and Profitability: A Study of Selected FMCG Companies in India. Business and Economics Journal, 2012 (Vol), 1-11.

Bardia, S.C. (2004), Liquidity management: A case study of steel authority of India Ltd. The Management Accountant, 39(6), 463-495.

Barot, H. (2012), Working Capital Management and Profitability: Evidence from India – An Empirical Study. GFMJR, 5, 1-16.

Belt, B. (1985), The Trend of the Cash Conversion Cycle and its Components. Akron Business and Economic Review, 16(3). 48-54.

Berk, J., DeMarzo, P., Hardford, J. (2014), Fundamentals of Corporate Finance. 2nd ed. London: Pearson Education. p564-584.

Besley, S., Meyer, R. L.(1987). An Empirical Investigation of Factors Affecting the Cash Conversion Cycle. presented at the Annual Meeting of the Financial Management Association, Las Vegas, Nevada.

Blinder, A.S., Maccini, L.J. (1991), The resurgence of inventory research: What have we learned? Journal of Economic Survey, 5, 291-328.

Deloof, M. (2003), Does working capital management affect profitability of Belgian firms. Journal of Business and Finance Accounting, 30(3/4), 573-587.

Farrar, D., Glauber. R (1967), Multicollinearity in regression analysis: The problem revisited. The Review of Economics and Statistics, 49(1), 92-107.

Filbeck, G.G., Krueger, T. (2005), An analysis of working capital management results across industries. American Journal of Business, 20(2), 11-20.

García-Teruel, P.J., Martínez-Solano, P. (2007), Effects of working capital management on SME profitability. International Journal of

Managerial Finance, 3(2), 164-177.
Gentry, A., Vaidyanathan, R., Lee, H. (1990), A weighted cash conversion cycle. Financial Management, 19(1), 90-99.
Goel, U., Sharma, S.K. (2015), Working capital management efficiency in Indian manufacturing sector: Trends and determinants. International J Economics and Business Research, 10(1), 30-45.
Gitman, J., Sachdeva, S. (1982), A framework for estimating and analyzing the required working capital investment. Review of Business and Economic Research, 17(3), 32-38.
Gumber, M., Kumar, S. (2012), A comparative analysis of management of working capital in fertilizers industry. International Journal of Innovations in Engineering and Technology, 1(2), 83-89.
Judge, G.G., Griffiths, W.E., Hill, R.C., L¨utkepohl, H., Lee, T.C. (1985), The Theory and Practice of Econometrics. New York: John Wiley & Sons.
Lyroudi, K., Lazaridis, J. (2000), The Cash Conversion Cycle and Liquidity Analysis of the Food Industry in Greece. Available from: http://www.papers.ssrn.com/paper.taf?abstract_id=236175. [Last retrieved on 2016 Jan].
Lyroudi, K., McCarty,D. (1993), An Empirical Investigation of the Cash Conversion Cycle of Small Business Firms. The Journal of Entrepreneurial Finance. 2(2), 139-161.
Madhavi, K. (2014), Working capital management of paper mills. International Journal of Research in Business Management, 2(3), 63-72.
Majeed, S., Makki, M.M., Saleem, S., Aziz, T. (2012), The relationship of cash conversion cycle and firm's profitability: An empirical investigation of Pakistani firms. International Journal of Financial Management, 1(1), 80-96.
Makori, D., Jagongo, A. (2013), Working capital management and firm profitability: Empirical evidence from manufacturing and construction firms listed on Nairobi securities exchange, Kenya. International Journal of Accounting and Taxation, 1(1), 1-14.
Mathuva, D. (2014), An empirical analysis of the determinants of the cash conversion cycle in Kenyan listed non-financial firms. Journal of Accounting in Emerging Economies, 4(2), 175-196.
Marttonen, S., Monto, S., Kärri, T. (2013), Profitable working capital management in industrial maintenance companies. Journal of Quality in Maintenance Engineering, 19(4), 429-446.
Megginson, W.L., Smart, S.B., Graham, J.R. (2010), Financial Management. 3rd ed. Mason, Ohio: South Western, Cengage Learning. p726-785.
Monika, M. (2014), Measuring Efficiency and Performance of Selected Indian Steel Companies in the Context of Working Capital Management. Pacific Business Review International. 6 (11), 18-23.
Murthy, S. (2015), Working capital, financing constraints and firm financial performance in GCC Countries. Information Management and Business Review, 7(3), 59-64.
Naser, K., Nuseibeh, R., Al-Hadeya, A. (2013), Factors influencing corporate working capital management: Evidence from an emerging economy. Journal of Contemporary Issues in Business Research, 2(1), 11-30.
Nobanee, H., Abdullatif, M., AlHajjar, M. (2011), Cash conversion cycle and firm's performance of Japanese firms. Asian Review of Accounting, 19(2), 147-156.
Nordgren, R.K. (1981), The cornerstone of liquidity analysis: Working capital. The Journal of Commercial Bank Lending, 64, 11-19.
Pais M., Gama, P. (2015), Working capital management and SMEs profitability: Portuguese evidence. International Journal of Managerial Finance, 11(3), 341-358.
Panigrah, A.K. (2013), Cash conversion cycle and firms' profitability – A study of cement manufacturing companies of India. International Journal of Current Research, 5(6), 1484-1488.
Panigrahi, A.K., Sharma, A. (2013), Working capital management and firms' performance: An analysis of selected Indian cement companies. Asian Journal of Research in Business Economics and Management, 3(9), 115-130.
Raheman, A., Afza, T., Qayyum, A., Bodla, M.A. (2010), Working capital management and corporate performance of manufacturing sector in Pakistan. International Research Journal of Finance and Economics, 47, 151-163.
Richards, D., Laughlin, E. (1980), A cash conversion cycle approach to liquidity analysis. Financial Management, 9(1), 32-38.
Sarbapriya, R. (2012), Evaluating the impact of working capital management components on corporate profitability: Evidence from Indian manufacturing firms. International Journal of Economic Practices and Theories, 2(3), 127-136.
Singh, H., Kumar, S. (2014), Working capital management: A literature review and research agenda. Qualitative Research in Financial Markets, 6(2), 173-197.
Sharma, A.K., Kumar, S. (2011), Effect of working capital management on firm profitability: Empirical evidence from India. Global Business Review, 12(1), 159-173.
Shin, H.H., Soenen, L. (1998), Efficiency of working capital management and corporate profitability. Financial Practice and Education, 8(2), 37-45.
Shrof, S. (2014), Working capital management of market leaders. Pacific Business Review International, 6(11), 79-86.
Suraj, M.N. (2010), Working capital management of cement industry in India - A comparative analysis of selected units. Available from: http://www.etheses.saurashtrauniversity.edu/id/eprint/207. [Last retrieved on 2015 Dec].
Upadhyay, S., Sen, B., Smith, D. (2015), The cash conversion cycle and profitability: A study of hospitals in the state of Washington. The Journal of Health Care Finance, 41(4), 39-48.
Vaidya, R. (2011), The determinants of trade credit: Evidence from Indian manufacturing firms. Modern Economy, 16(5), 4-7.
Vijayakumar, A. (2011), Management of corporate liquidity and profitability: An empirical study. International Journal of Marketing and Technology, 1(6), 151-175.