

Impact of working capital management on profitability of Industrial sector in Iraq

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Abstract

This paper observes the impact of working capital management on profitability of industrial sector in Iraq. Four companies based in Iraq namely: Iraqi Date processing, Iraqi carton manufactories, Baghdad soft drinks and Iraqi for tufted carpets randomly selected and analyzed for the present study over the period 2007 to 2016. Annual reports of these companies have been studied and significant ratios calculated. The variables that were identified as independent for working capital were, current ratio and quick ratio, while return on equity ROE as dependent variable for profitability. The Ordinary Least Square (OLS) model used to examine the impact of working capital management on profitability. Results indicate that ROE is positively related with working capital variables.

Keywords: Working Capital; Profitability; Current Ratio; Quick Ratio

JEL classification: G17; G21

Introduction

Recently, an important component of corporate financial management is the management of working capital, because they may effect on firm's profitability, risk and its value. Qazi et al. (2011) mention that an important factor in financial management is working capital management. Similarly, Smith (1980, cited in Rizwan and Shah, 2015) believes that "(WCM) plays a key role in financial management as its effects on firms performance, risk and thus on its value". Working capital is the difference between current assets and current liabilities. This study is aimed to find out the impact of working capital management on profitability in the four Iraqi industrial companies namely Baghdad soft drinks, Iraqi Carton Manufactories, Iraqi Date Processing and Marketing, and Iraqi For Tufted Carpets over the period of 2007 to 2016.

In this study, the impact of working capital management on profitability of industrial sector in Iraq has been questioned. The major hypotheses were formulated for the study based on the literature review following the introduction part of the paper: H_0 :- Working capital management has a negative impact on the profitability of industrial sector in Iraq and H_1 :- Working capital management has a positive impact on the profitability of industrial sector in Iraq.

This study is organized as follows. Following the introduction part of this study, major researches in the field have been assessed based on the the effects of working capital management on the profitability of industrial sector in Iraq. The third part is the research and findings of this study. Implications are made in the next section. Finally the conclusion of this research paper will be underlined.

Literature Review

Several studies have been taken by different authors to investigate the impact of working capital management on profitability. Working capital management might have a significant relationship with profitability. For instance, Padachi (2006) found a strong significant relationship between working capital management and profitability for a sample of 58 small manufacturing firms for the period 1998 – 2003. Similarly, Afeef (2011) believe that there is a perceptible impact of working capital on profitability of a sample of 40 Pakistani small and medium enterprises (SME's) listed in Karachi Stock.

Awan et al.(2014) examined the impact of working capital management on profitability for ten Pakistani cement companies over the five years and found that return on equity was negatively related with Cash conversion cycle, current ratio and inventory turnover. However, they found positive link between ROE and Gross working capital turnover. Raheman and Nasr (2007) found a strong negative relationship between variables of the working capital management and profitability of the firm for a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999 – 2004. Moreover, Rizwan and Shah (2015) found a very weak negative relationship between Account Receivable turnover, Account Payable turnover and Inventory Turnover for a sample of 10 companies listed in Pakistan over the seven years from 2008 to 2014.

Ahmed (2013, cited in Rizwan and Shah, 2015) examined the impact of working capital management on the firms' performance by using the financial statement data of 253 non-financial firms listed in Karachi Stock Exchange and found that current asset to total sales has a negative relation with profitability while, WCM has a positive relation to the firm's performance. Lawal et al. (2015) believe that there is a significant negative relationship between the components of working capital and profitability for a sample of six selected companies in Nigeria over the period of 2006 to 2013. Furthermore, Alipour (2011) found a negative relationship between working capital ratios and profitability of a sample of 1063 Iranian companies. In the same way Iqbal (2016) found a negative link between working capital components and profitability.

Qazi et al.(2011) believe that there is a positive movement between working capital and profitability. Nasreen et al. (2014) state that managing working capital efficiently, the profitability of firms will be enhanced in the study about the impact of working capital management on firm's profitability of 45 companies listed at KSE covering five years from 2008-2012. Gill et al.(2010) found a significant relationship between the cash conversion cycle and profitability for 88 American firms listed on New York Stock Exchange over the period of 2005 to 2007.

Sadiq (2017) believes that there is a mix impact of working capital on performance. Awan et al (2014) in the research about impact of working capital on profitability in cement sectors of 10 Pakistani cement companies listed on Karachi Stock Exchange over the five years from 2009-2013, found a mix impact of working capital on profitability. Similarly, Makori and Jagongo (2013), Kumaraswamy (2016) found a mix influence of working capital on performance of Gulf Cooperation Council Firms of a period of 2008-2014.

Research and Methodology

The population of this study is the industrial firms of Iraq. The sample of this study is restricted to industrial firms which contains of only four companies. This sample is arbitrarily selected and examined for the study purposes. Secondary data has been collected from annual reports of that firms for this study and their annual reports are available on Iraqi stock exchange site. Moreover, this research is based on time series data through 10 years from 2007 to 2016. E-views 8 statistical software used for analyzing collected data. The data tested through descriptive statistics, correlation and regression analysis. Ordinary least square (OLS) estimation of data method used to obtain main results of the impact of working capital management on profitability of industrial firms in Iraq. Profitability has been selected as a dependent variable through ROE as well as working capital management has been determined as independent variable through CR and QR. The models for this study and variables have been used as follows:

Dependent variable

Return on Equity= Net income / total equity or capital

Independent variables

Current ratio (CR) = current assets / current liabilities

Quick ratio (QR) = current assets – inventory /current liabilities

Models

$$ROE = \alpha + \beta_{11} CR + \beta_{12} QR + U_i$$

Where:

ROE= Return on Equity

CR= current ratio

QR= quick ratio

α : the constant , β : the regression coefficient

Findings and analysis

Table 1: Descriptive statistics of the variables

	ROE	QR	CR
Mean	-0.827016	3.542875	5.438500
Median	0.052541	2.430000	3.465000
Maximum	4.470000	19.74000	24.14000
Minimum	-34.76000	0.060000	0.090000
Std. Dev.	5.567151	3.591699	5.597108
Skewness	-5.853730	2.386829	1.757362
Kurtosis	36.32084	11.28649	5.765675
Jarque-Bera	2078.905	152.4230	33.33707
Probability	0.000000	0.000000	0.000000
Sum	-33.08065	141.7150	217.5400
Sum Sq. Dev.	1208.734	503.1118	1221.777
Observations	40	40	40

Table 1 shows that the descriptive statistics of the ROE as a dependent variable and QR, CR as independent variable of four Iraqi industrial firms over the ten years. It is clear to note that not all the variables have a positive mean. ROE -0.827016, QR 3.542875 and CR 5.438500. CR has the highest maximum value of 24.14000 and ROE has the lowest maximum value of 4.470000. CR has the highest minimum value of 0.090000 and ROE has the lowest value of -34.76000. The highest standard deviation value is CR 5.597108 and the minimum one is ROE with a value of 5.567151. It can be seen from the above table of descriptive statistics all the variables have not positive descriptive value.

Table 2: Correlation Matrix

	ROE	QR	CR
ROE	1	0.1497973847983817	0.1499032905853757
QR	0.1497973847983817	1	0.8457064312564295
CR	0.1499032905853757	0.8457064312564295	1

Table 2 displays the correlation between dependent variable which is return on equity and independent variables such as CR and QR ratio over the stated period. It can be observed from the table that the positive correlation found between the dependent ROE and all independent variables. So that an increase in independent variables, dependent variable will also increase. Moreover, no correlation coefficient is passed our rule of thumb ± 0.8 although the relation of QR and CR is quite high. An important finding of correlation matrix of this study is that the correlation between independent variables is positive.

Table 3: output from E-views

Dependent Variable: ROE
 Method: Panel Least Squares
 Date: 12/02/17 Time: 17:25
 Sample: 2007 2016
 Periods included: 10
 Cross-sections included: 4
 Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.712014	1.283067	-1.334313	0.1903
CR	0.081095	0.302666	0.267937	0.7902
QR	0.125311	0.471659	0.265681	0.7920
R-squared	0.024332	Mean dependent var		-0.827016
Adjusted R-squared	-0.028406	S.D. dependent var		5.567151
S.E. of regression	5.645669	Akaike info criterion		6.371693
Sum squared resid	1179.322	Schwarz criterion		6.498359
Log likelihood	-124.4339	Hannan-Quinn criter.		6.417491
F-statistic	0.461374	Durbin-Watson stat		2.201148
Prob(F-statistic)	0.633995			

It can be clearly seen from the Table 3 that the results of regression which is least square. From the table for a one unit increase in CR, ROE will increase by 0.081095 holding all other variables constant. The positive relationship make sense. Any increase in the CR should increase ROE. Furthermore, any increase in the QR, ROE will increase by 0.125311 holding other variables constant. The constant term here provides approximately the average of ROE -1.712014 that ROE will equal to -1.712014 when there is no independent variables. This does not make any economic sense.

Table 6: T- statistics and probabilities

Variable	t-Statistic	Prob.
C	-1.334313	0.1903
CR	0.267937	0.7902
QR	0.265681	0.7920

All tests are two sided and conducted at the 5% level, with degree of freedom(N-K-1) equal to 36. It gives approximately a t-critical value of +/-2.042/ so that if /t-statistic/ > /t-critic/ the null hypothesis will be rejected at the 5% level.

For CR:

H0: B1 equals to 0; H1:B1 not equals to 0

/ 0.267937/ </ 2.66/ thus the null hypothesis will not be rejected and it can be said that B1 is significantly different from zero at the 5% level. And p-value is 0.7902, it means that the null hypothesis will not be rejected at 10% level.

For QR:

H0: B1 equals to 0; H1:B1 not equals to 0

/ 0.265681/ </ 2.66/ thus the null hypothesis will not be rejected and it can be said that B1 is significantly different from zero at the 5% level. And p-value 0.8835, it means that the null hypothesis will not be rejected at 10% level.

In order to test overall significance test:

H0: B1=B2=B3=0; H1: at least one B1 is not equal to zero.

The F- statistics reported by E-views is 0.461374. Using the P-value which equals to 0.633995the null hypothesis cannot be rejected and say the variables are jointly significantly different from zero at the 10% level. The R2= 0.024332 and the adjusted R2= -0.028406. It means that 0.024332 of the variation in ROE can be explained by explanatory variables. This is not high percentage indicating that this model is not doing a variable good job at explain variations in ROE. Moreover, no problem of autocorrelation found in the model equation because Durbin-Watson Stat is 2.201148. The results of the study is shown under the regression equation as:

$$\text{ROE} = -1.712014 + 0.081095 (\text{CR}) + 0.125311 (\text{QR}) + \text{Ci}$$

Discussion

It is clear from the results of linear regression analysis that ROE is positively related with working capital components. In terms of ROE and working capital this result is not in line with the result of Lewal et al (2015), Rizwan and Shah (2015), Nasr (2007), Awan et al. (2014), Alipour (2011) and Iqbal (2016). On the other hand, this result is consistent with the result of the study of Qazi et al. (2011), and Nasreen et al. (2014).

Conclusion

To sum up, this research has investigated the impact of working capital management on profitability of Iraqi industrial firms. The duration of the study is from 2007 to 2016. Secondary data have been taken from

annual reports of that that companies. Return on equity was used as the dependent variable, while quick ratio and current ratio as independent variables. The study finds a positive relationship between ROE and components of working capital management.

References

- Afeef, M. (2011). Analyzing the Impact of Working Capital Management on the Profitability of SME's in Pakistan. *International Journal of Business and Social Science*. 2(22): 173-183.
- Alipour, M. (2011). Working Capital Management and Corporate Profitability: Evidence from Iran. *World Applied Sciences Journal*, 12 (7): 1093-1099.
- Awan, A. G., Shaid, P., Hasan, J. and Ahmed, W. (2014). Impact of working capital management on profitability of cement sector in Pakistan. *International Journal of Business and Management Review*, 2(4): 1-20.
- Awn, A.G., Shahid, P., Hassan, J. and Ahmad, W.(2014). Impact of working capital management on profitability of cement sector in Pakistan. *International Journal Of Business Management Review*. 2(4): 1-20.
- Gill, A. Biger, N. and Mathur, N. (2010). The Relationship Between Working Capital Management And Profitability: Evidence From The United State. *Business and Economics Journal* : BEJ-10.
- Iqbal, M. (2016). Impact of Working Capital Management on Firm Profitability in Textile Industry of Pakistan. *Industrial Engineering Letters*, 6(3): 29-32.
- Kumaraswamy, S. (2016). Impact of Working Capital on Financial Performance of Gulf Cooperation Council Firms. *International Journal of Economics and Financial Issues*, 6(3), 1136-1142.
- Lawal, A. A., Abiola, B. I. and Oyewole, O. M. (2015). Effect of Working Capital Management on the Profitability of Selected Manufacturing Companies in Nigeria. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*. 19(2): 370-386.
- Makori, M. and Jagongo, A. (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms Listed on Nairobi Securities. *International Journal of Accounting and Taxation*, 1(1): 1-14.
- Nasreen, S., Khanam, F., and Pirzada, S.S. (2014). Impact of Working Capital Management on Firm'S Profitability. *Research Journal of Finance and Accounting*, 5(11): 210-222.
- Padachi, K. (2006). Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms. *International Review of Business Research Papers*. 2(2): 45-58.
- Qazi, H.A., Shah, S.M.A., Abbas, Z., and Nadeem, T. (2011). Impact of working capital on firms' profitability. *African Journal of Business Management*. 5(27): 11005-11010.
- Raheman, A. and Nasr, M. (2007). Working Capital Management And Profitability – Case Of Pakistani Firms. *International Review of Business Research Papers*. 3(1): 279-300.
- Rizwan, S. and Shah, F.M. (2015). Impact of Working Capital Management on Firm's Performance: A Case of Textile Spinning Sector in Pakistan. *International Journal of Scientific & Engineering Research*, 6(11): 1313. 1321.
- Sadiq R (2017) Impact of Working Capital Management on Small and Medium Enterprises' Performance in Nigeria. *Arabian J Bus Manag Review*, 7(1): 285. doi: 10.4172/2223-5833.1000285.