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IMPACT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY IN THE LISTED FIRMS IN THE RETAIL SECTOR IN THE SAUDI STOCK EXCHANGE

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ABSTRACT

Working capital management is an important issue in financial management, considering its large role on the profitability and liquidity of firms. This paper aims to explore the effects of working capital management on profitability in 14 Saudi retail companies that are listed in the Saudi Stock Exchange (Tadawul) over the period of 2011-2014. This study will employ panel data regression analysis using Pooled OLS to test the relationship between working capital components, which are the cash conversion cycle (CCC), current assets to total assets (CATAR), current assets to current liabilities ratio (CACLR), current liabilities to total assets ratio (CLTAR) and debt to total assets ratio (DTAR) and profitability measured by return on assets (ROA) and return on invested capital (ROIC). The working capital management components represent the independent variables, while the profitability variables represent the dependent variables used in the model. The results show no significant relationship between working capital management components and ROA and ROIC in all the companies and the ones who predominantly deal with services, except for companies that deal with mainly goods, where there is a significant negative relationship between CACLR and ROA.

INTRODUCTION

Working capital management has recently attracted research attention, especially after the 2008 financial crisis, whereby in the past most theoretical progress was focused on the area of long-term investment [1] Excessive investment in working capital can inflict opportunity costs and lead to a decrease in a firm's profitability, so the main goal should be focused on making sure that these companies have adequate amounts of cash flow to be able to sustain their day-to-day operations while making their short term payments [2]. Working capital management and its components has been the subject of many scholarly works with aims to understand its relationship with firms' profitability. Different authors have used different variables,

environments and analysis techniques in order to investigate the importance of working capital management.

Makori and Jagongo [3] investigated the influence of working capital management on the profitability of five manufacturing and construction firms listed on the Nairobi Securities Exchange for the period 2003 to 2012. Both Pearson's correlation and OLS regression models were used in this study. Return on assets was used as a dependent variable in this study. This study found a negative relationship between profitability and the cash conversion cycle and between profitability and the average collection period. A study by Abuzayed [4] arrived at a conclusion that the cash conversion cycle positively affects profitability, namely gross operating profit. His study was conducted on a sample of 52 listed Jordanian firms from 2000 to 2008 and the data was analyzed using pooled OLS. The results implied that more profitable firms are less forced to manage their working capital; the study suggests that this positive relation might be the outcome of the market failing to panelize these firms for their ineffective working capital management. Furthermore, a study done by Al-Shubiri and Aburumman [5] found, while testing the relationship between the cash conversion cycle and financial characteristics, a significant positive relationship between the CCC and productivity index, liquidity index, debt ratio, market index, size index and dividends index. However and most importantly, the study found an insignificant relationship between the CCC and the profitability index, which is calculated as the ratio of return on assets.

The study was done on a sample of listed Jordanian companies taken from 11 industrial sectors from 2005 to 2011 using descriptive and correlation analysis. Pouraghajan and Emamgholipourarchi [6] found in their study empirical evidence on the impact of working capital management on both profitability and market evaluation of 80 companies listed in Tehran Stock Exchange from 2006 to 2010. They used linear multiple regression analysis and two-sided Pearson correlation to analyze the data and test their hypotheses. An overall significant relationship between working capital management and profitability, however they found that there is no significant relationship with the market value of these companies. Bagchi, Chakrabarti and Roy [7] investigated the effects of the components of working capital management on profitability of 10 Fast Moving Consumer Goods firms in India. Their results showed a strong negative relationship between the components of WCM and the profitability of these firms, which indicated the importance of finding an efficient balance between liabilities and assets to improve the profitability of these firms. Moreover, they found that DTA, AD, AC and AI to have a negative relationship with ROTA, while CCC, DTA and AC are negatively associated with ROI. They also concluded that there is a better explanatory power of fixed effect LSDV model than in pooled OLS model.

Little research has been done with regards of working capital management and its effect on profitability in Saudi firms. Thus, this paper aims to identify the effects of working capital management components and provide relevant recommendations for listed retail companies in Saudi Arabia, which will evidently contribute to the growth and development of these companies.

METHODOLOGY

To properly investigate the relationship between working capital management and profitability, this study uses variables in accordance with Mohamad and Saad [8] as well as Pouraghajan and Emamgholipourarchi [6]. The dependent variables are the return on assets ratio (ROA) and return on invested capital (ROIC) used as measurements of profitability. The independent variables representing working capital management components used are the cash conversion cycle (CCC), current assets to total assets ratio (CATAR), current liabilities to total assets ratio (CLTAR) and total debt to total assets ratio (DTAR). This study chose ratio analysis as a measurement of performance because it provides a way of measuring the financial strengths and weaknesses of firms by using information found in these firms' financial statements.

The data collected were from all 14 retail companies listed in the Saudi Stock Exchange (Tadawul) for 4 years from 2011 to 2014, with the exception of Fitaihi holding group where the available data is from 2010 to 2013. This study chose to focus on listed retail companies because they presented reliable financial statements, unlike non-listed companies where the data might not be as reliable. To ensure further accuracy, the required annual financial data of these companies has been gathered from the site Tadawul. This secondary annual data was retrieved from the firms' balance sheets and income statements stated in Tadawul in order to get a true and comprehensive idea on working capital practices in these firms. The results were extracted using pooled OLS, random and fixed effects model, where 56 cross sections are observed over a period of 4 years in a panel data setting in order to investigate the impact of working capital management of the profitability of listed Saudi retail companies. The determinants of return of assets (ROA) and return on invested capital (ROIC) are examined for all 56 observations. Where:

X1=Cash Conversion Cycle-CCC

X2=Current Assets to Current Liabilities Ratio-CACLR

X3=Current Assets to Total Assets Ratio- CATAR

X4=Current Liabilities to Total Assets Ratio- CLTAR

X5=Debt to Total Assets Ratio- DTAR

Results And Discussion

Pooled OLS

The data was first run through pooled OLS. In the first and second regressions shown in Table 1 and 2 results show no statistical significance of any independent variable on both ROA and ROIC. In the results of testing the impact of the independent variables on ROA (Table 1), the constant C that represents the amount ROA will be when all the dependent variables are 0 is 0.13, and the probability of the coefficient is significant. Additionally, when conducting the same test on ROIC (Table 2) the results show that the Probability (F-statistic) is significant at a value of 0.000320, which indicates

that our independent variables can jointly influence our dependent variable ROIC.

Table 1: Results for Pooled Ordinary Least Squares for ROA for All Companies

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.138999	0.059099	2.351971	0.0227
X1	-0.000122	6.51E-05	-1.877740	0.0663
X2	-0.008452	0.011213	-0.753784	0.4545
X3	0.021864	0.086914	0.251557	0.8024
X4	0.034509	0.139877	0.246711	0.8061
X5	-0.032381	0.125486	-0.258045	0.7974
R-Squared	0.191723	Mean Dependent Var.		0.116889
Adjusted R-Squared	0.110895	S.D. Dependent Var.		0.067913
S.E. of Regression	0.064037	Akaike Info Criterion		-2.557749
Sum Squared Residuals	0.205038	Schwarz Criterion		-2.340747
Log Likelihood	77.61698	Hannan-Quinn Criterion		-2.473618
F-Statistic	2.371992	Durbin-Watson Statistic		0.407096
Prob(F-Statistic)	0.052330			

Table 2: Results for Pooled Ordinary Least Squares for ROIC for All Companies

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.131667	0.100759	1.306749	0.1973
X1	-0.000125	0.000111	-1.128902	0.2643
X2	-0.008406	0.019118	-0.439718	0.6620
X3	-0.045706	0.148181	-0.308445	0.7590
X4	0.177752	0.238480	0.745354	0.4595
X5	0.169624	0.213944	0.792842	0.4316
R-Squared	0.362073	Mean Dependent Var.		0.210657
Adjusted R-Squared	0.298281	S.D. Dependent Var.		0.130333
S.E. of Regression	0.109179	Akaike Info Criterion		-1.490705
Sum Squared Residuals	0.595999	Schwarz Criterion		-1.273703
Log Likelihood	47.73974	Hannan-Quinn Criterion		-1.406574
F-Statistic	5.675780	Durbin-Watson Statistic		0.284244
Prob(F-	0.000320			

Statistic)			

In order to get a more coherent understanding of the data and to see where there is a difference in results, this study categorized the 14 listed Saudi retail companies into two groups to be tested using the same model separately. The first group contains 9 companies in which their sales are predominantly goods and the second group contains 5 companies in which their sales are predominantly services. The results of the third regression tested the independent variables against ROA for companies that are predominantly dealing in goods.

The results showed that CACLR was significant at a 5% level, with a negative relationship between CACLR and ROA (Table 3) which indicates that 9 of the total listed 14 companies can increase their ROA by decreasing their CACLR. The constant C was also found to be significant at 0.299861. The R-squared measures the overall fit of the model by measuring the success of the regression analysis in predicting the values of the dependent variable and is 33.367%. The adjusted R-squared, or the coefficient of multiple determinations, also measures the fit of the model where it adjusts for degrees of freedom used up by adding extra independent variables by penalizing R-squared for these independent variables. The R-squared in this case is 22.26%. The overall the Probability (F-statistic) is 0.0257, all of which indicates that the model used is sound.

Table 3: Results for Pooled Ordinary Least Squares for ROA for Companies that Deal with Predominantly Goods

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.299861	0.126884	2.363263	0.0248
X1	-8.90E-05	9.15E-05	-0.973086	0.3383
X2	-0.148648	0.058420	-2.544492	0.0163
X3	0.328843	0.162502	2.023623	0.0520
X4	-0.207245	0.268434	-0.772052	0.4461
X5	-0.117374	0.286917	-0.409085	0.6854
R-Squared	0.333671	Mean Dependent Var.		0.119023
Adjusted R-Squared	0.222616	S.D. Dependent Var.		0.082226
S.E. of Regression	0.072498	Akaike Info Criterion		-2.259508
Sum Squared Residuals	0.157678	Schwarz Criterion		-1.995588
Log Likelihood	46.67114	Hannan-Quinn Criterion		-2.167393
F-Statistic	3.004555	Durbin-Watson Statistic		0.548700
Prob(F-Statistic)	0.025773			

After running the fourth regression analysis with the ROIC as the independent variable for companies that deal with predominantly goods, the results show a negative significant relationship between CACLR and ROIC at the 5% significant level (Table 4) which indicates that these companies can significantly increase their ROIC by decreasing their CACLR, which will in terms increase their profitability. The R-squared is 41.7% and the Adjusted R-squared is 31.99%. The Probability (F-statistic) is 0.004595 indicating the significance of the model used.

Table 4: Results for Pooled Ordinary Least Squares for ROIC for Companies that Deal with Predominantly Goods

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.384537	0.224192	1.715216	0.0966
X1	-8.55E-05	0.000162	-0.528793	0.6008
X2	-0.219826	0.103221	-2.129658	0.0415
X3	0.413287	0.287124	1.439401	0.1604
X4	-0.240049	0.474295	-0.506117	0.6165
X5	0.068448	0.506954	0.135019	0.8935
R-Squared	0.417093	Mean Dependent Var.		0.234149
Adjusted R-Squared	0.319942	S.D. Dependent Var.		0.155333
S.E. of Regression	0.128096	Akaike Info Criterion		-1.121056
Sum Squared Residuals	0.492260	Schwarz Criterion		-0.857137
Log Likelihood	26.17902	Hannan-Quinn Criterion		-1.028941
F-Statistic	4.293243	Durbin-Watson Statistic		0.437815
Prob(F-Statistic)	0.004595			

After running the fifth regression for companies in which their sales are predominantly services with ROA being the dependent variable, the results showed that the CCC and DTAR were significant with ROA at a 5% significant level (Table 5). However the coefficient of the CCC is very small, almost close to zero, making it somewhat negligible. The DTAR however has a more significant negative relationship with ROA, demonstrating that these companies can notably increase their profitability by decreasing their DTAR. Here, the C has a coefficient of 0.22 and is significant. The R-squared and the Adjusted R-squared both indicate the soundness of the model at 55% and 39% respectively. The Probability (F-statistic) has a value of 0.03117 also reflecting the significance of the model.

The sixth regression shown in Table 6 demonstrates the significance of the independent variables on ROIC for companies that deal with predominantly services. Even though the results indicate that the CCC has a significant relationship with ROIC, the coefficient is very small that the relationship is to be considered insignificant. The constant C is significant with a coefficient of

0.237. The accuracy of the model is shown in the R-squared at 55.49% and the Adjusted R-squared at 39.59%. The Probability (F-statistic) with a value of 0.029453 also represents the soundness of the model.

Table 5: Results for Pooled Ordinary Least Squares for ROA for Companies that Deal with Predominantly Services

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.220144	0.039519	5.570608	0.0001
X1	-0.000586	0.000191	-3.058020	0.0085
X2	-0.001903	0.010857	-0.175330	0.8633
X3	-0.072653	0.118152	-0.614908	0.5485
X4	0.127006	0.263368	0.482238	0.6371
X5	-0.155928	0.066428	-2.347309	0.0341
R-Squared	0.550744	Mean Dependent Var.		0.113048
Adjusted R-Squared	0.390296	S.D. Dependent Var.		0.029537
S.E. of Regression	0.023064	Akaike Info Criterion		-4.457772
Sum Squared Residuals	0.007447	Schwarz Criterion		-4.159052
Log Likelihood	50.57772	Hannan-Quinn Criterion		-4.399459
F-Statistic	3.432533	Durbin-Watson Statistic		1.189338
Prob(F-Statistic)	0.031170			

Table 6: Results for Pooled Ordinary Least Squares for ROIC for Companies that Deal with Predominantly Services

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.237089	0.056461	4.199167	0.0009
X1	-0.000837	0.000274	-3.060866	0.0085
X2	0.000462	0.015511	0.029816	0.9766
X3	-0.127752	0.168806	-0.756801	0.4617
X4	0.249944	0.376276	0.664257	0.5173
X5	0.005911	0.094907	0.062280	0.9512
R-Squared	0.554938	Mean Dependent Var.		0.168372
Adjusted R-Squared	0.395988	S.D. Dependent Var.		0.042399
S.E. of Regression	0.032952	Akaike Info Criterion		-3.744227
Sum Squared Residuals	0.015201	Schwarz Criterion		-3.445508
Log Likelihood	43.44227	Hannan-Quinn Criterion		-3.685914
F-Statistic	3.491263	Durbin-Watson Statistic		1.401053

Prob(F-Statistic)	0.029453		

Hausman's Specification Test

After getting the results of all the above-mentioned regressions, all of them were then tested for random effects and fixed effects. The reason for this is that pooled OLS denies the individuality that may exist between the companies in our sample, and that can be fixed by using fixed or random effects model. After that, Hausman's test was run to identify which one of the two models is appropriate (Table 7, 8, 9 and 10).

The values of Hausman's test all came up more than 0.05, indicating the acceptance of the null hypothesis which means the random effects model is more appropriate. However, no random effects exist when testing ROA and ROIC in predominantly service companies because the number of cross sections is not greater than that of coefficients, resulting in accepting the fixed effects model for these two regressions.

Table 7: Results for Hausman Test for ROA for All Companies

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-Section Random		3.057118	5	0.6912
Cross-Section Random effects Test Comparisons				
Variables	Fixed	Random	Var(Diff.)	Prob.
X1	-0.000029	-0.000079	0.000000	0.3046
X2	-0.016423	-0.010158	0.000041	0.3298
X3	0.135116	0.054399	0.006512	0.3172
X4	-0.129715	0.039580	0.024013	0.2746
X5	-0.128797	-0.121981	0.001077	0.8355

Table 8: Results for Hausman Test for ROIC for All Companies

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-Section Random		2.793913	5	0.7317
Cross-Section Random effects Test Comparisons				
Variables	Fixed	Random	Var(Diff.)	Prob.
X1	-0.000004	-0.000059	0.000000	0.3895
X2	-0.016473	-0.007814	0.000071	0.3037
X3	0.119678	0.007803	0.011122	0.2888
X4	-0.107666	0.139000	0.042133	0.2295
X5	0.042324	0.042881	0.001654	0.9891

Table 9: Results for Hausman Test for ROA for Companies that Deal with Predominantly Goods

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-Section Random		7.911545	5	0.1612
Cross-Section Random effects Test Comparisons				
Variables	Fixed	Random	Var(Diff.)	Prob.
X1	-0.000052	-0.000105	0.000000	0.4255
X2	-0.053004	-0.070641	0.000211	0.2248
X3	0.276979	0.195645	0.012455	0.4661
X4	-0.196228	-0.111586	0.025275	0.5944
X5	-0.249269	0.111487	0.016295	0.2804

Table 10: Results for Hausman Test for ROIC for Companies that Deal with Predominantly Goods

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-Section Random		7.434191	5	0.1903
Cross-Section Random effects Test Comparisons				
Variables	Fixed	Random	Var(Diff.)	Prob.
X1	-0.000016	-0.000097	0.000000	0.3448
X2	-0.048160	-0.071484	0.000347	0.2105
X3	0.282207	0.172916	0.020461	0.4448
X4	-0.178490	-0.067242	0.038622	0.5713
X5	-0.121035	0.066407	0.025980	0.2449

Where we tested the impact the independent variables have on ROA and ROIC, the results of the random effect model (Table 11 and 12) indicate that there is no significant relationship between the dependent variables and ROA and ROIC. Both of which however have a significant constant at 16% and 17% respectively.

Furthermore, the random effect model assumes that each company has its own characteristics in determining the dependent variable; there is no relationship between the dependent variables and the unobservable heterogeneity of each firm. When testing the relationship between ROA and the independent variables for companies who deal with predominantly goods, the random effects model results indicate a significant negative relationship between CACLR and ROA in companies that deal with predominantly goods at a 95% significance rate, where (P-value) or probability is less than 5% (Table 13), implying that these 9 companies can use CACLR to increase their profits. The

constant came in significant at 23%. When checking the random effects for the ROIC for companies who deal with predominantly goods, the results showed no significant impact on ROIC by the dependent variables in companies that deal with predominantly goods (Table 14). The constant came is significant at 26%. This result, in terms of CACLR having a negative effect on ROA, was consistent with Mohamed and Saad [8]. But the value between CACLR and ROIC disagreed with the findings of their study.

Table 11: Results for Random Effects Model for ROA for All Companies

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.162445	0.050493	3.217191	0.0023
X1	-7.95E-05	7.03E-05	-1.130239	0.2638
X2	-0.010158	0.009248	-1.098444	0.2773
X3	0.054399	0.097860	0.555889	0.5808
X4	0.039580	0.152071	0.260271	0.7957
X5	-0.121981	0.095950	-1.271295	0.2095
Effects Specifications				
		S.D.		Rho
Cross-Section Random		0.068192		0.8106
Idiosyncratic Random		0.032967		0.1894
Weighted Statistics				
R-Squared	0.103390	Mean Dependent Var.		0.027464
Adjusted R-Squared	0.013729	S.D. Dependent Var.		0.032545
S.E. of Regression	0.032321	Sum Squared Residuals		0.052231
F-Statistic	1.153118	Durbin-Watson Statistic		1.546217
Prob(F-Statistic)	0.345281			
Unweighted Statistics				
R-Squared	0.106080	Mean Dependent Var.		0.116889
Sum Squared Residuals	0.226763	Durbin-Watson Statistic		0.356145

Table 12: Results for Random Effects Model for ROIC for All Companies

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.170608	0.077777	2.193537	0.0329
X1	-5.86E-05	0.000108	-0.544832	0.5883
X2	-0.007814	0.013977	-0.559061	0.5786
X3	0.007803	0.150477	0.051855	0.9589
X4	0.139000	0.238326	0.583235	0.5624
X5	0.042881	0.141169	0.303756	0.7626
Effects Specifications				
		S.D.		Rho
Cross-Section Random		0.122086		0.8673
Idiosyncratic Random		0.047760		0.1327
Weighted Statistics				

R-Squared	0.085009	Mean Dependent Var.	0.040438
Adjusted R-Squared	-0.006490	S.D. Dependent Var.	0.046544
S.E. of Regression	0.046695	Sum Squared Residuals	0.109020
F-Statistic	0.929069	Durbin-Watson Statistic	1.492437
Prob(F-Statistic)	0.470200		
Unweighted Statistics			
R-Squared	0.280795	Mean Dependent Var.	0.210657
Sum Squared Residuals	0.671935	Durbin-Watson Statistic	0.242145

Table 13: Results for Random Effects Model for ROA for Companies that Deal with Predominantly Goods

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.232268	0.084274	2.756090	0.0099
X1	-0.000105	8.06E-05	-1.302767	0.2026
X2	-0.070641	0.033766	-2.092052	0.0450
X3	0.195645	0.141396	1.383662	0.1767
X4	-0.111586	0.251910	-0.442959	0.6610
X5	-0.111487	0.226332	-0.492583	0.6259
Effects Specifications				
		S.D.		Rho
Cross-Section Random		0.061687		0.7421
Idiosyncratic Random		0.036363		0.2579
Weighted Statistics				
R-Squared	0.146619	Mean Dependent Var.		0.033650
Adjusted R-Squared	0.004389	S.D. Dependent Var.		0.038170
S.E. of Regression	0.038087	Sum Squared Residuals		0.043517
F-Statistic	1.030858	Durbin-Watson Statistic		1.383928
Prob(F-Statistic)	0.417499			
Unweighted Statistics				
R-Squared	0.250810	Mean Dependent Var.		0.119023
Sum Squared Residuals	0.177286	Durbin-Watson Statistic		0.339705

Table 14: Results for Random Effects Model for ROIC for Companies that Deal with Predominantly Goods

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.260039	0.130339	1.995096	0.0552
X1	-9.71E-05	0.000127	-0.765499	0.4500
X2	-0.071484	0.050723	-1.409288	0.1690
X3	0.172916	0.222828	0.776006	0.4438

X4	-0.067242	0.391297	-0.171844	0.8647
X5	0.066407	0.346295	0.191764	0.8492
Effects Specifications				
		S.D.		Rho
Cross-Section Random		0.118865		0.8318
Idiosyncratic Random		0.053452		0.1682
Weighted Statistics				
R-Squared	0.110497	Mean Dependent Var.		0.051365
Adjusted R-Squared	-0.037754	S.D. Dependent Var.		0.054558
S.E. of Regression	0.055578	Sum Squared Residuals		0.092669
F-Statistic	0.745336	Durbin-Watson Statistic		1.366353
Prob(F-Statistic)	0.595832			
Unweighted Statistics				
R-Squared	0.314437	Mean Dependent Var.		0.234149
Sum Squared Residuals	0.578953	Durbin-Watson Statistic		0.218702

Where the fixed effects model was used to test the significance of the relationship between the independent variables and ROA and ROIC in companies that deal with predominantly services (Table 15 and 16), the results showed no considerable relationship between the dependent variables and ROA and ROIC. The fixed effects model assumes homogeneity among all companies; where there is a correlation between the unobservable heterogeneity of each firm and the dependent variables.

Table 15: Results for Fixed Effects Model for ROA for Companies that Deal with Predominantly Services

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.191070	0.102787	1.858885	0.0927
X1	-0.000468	0.000505	-0.925786	0.3764
X2	0.010827	0.022851	0.473791	0.6458
X3	-0.191638	0.246297	-0.778078	0.4545
X4	0.466108	0.526905	0.884616	0.3971
X5	-0.241991	0.122021	-1.983198	0.0755
Effects Specification				
Cross section fixed (Dummy Variables)				
R-Squared	0.604467	Mean Dependent Var.		0.113048
Adjusted R-Squared	0.248487	S.D. Dependent Var.		0.029537
S.E. of Regression	0.025606	Akaike Info Criterion		-4.185129
Sum Squared Residuals	0.006557	Schwarz Criterion		-3.687263
Log Likelihood	51.85129	Hannan-Quinn Criterion		-4.087941

F-Statistic	1.698038	Durbin-Watson Statistic	1.615321
Prob(F-Statistic)	0.210583		

Table 16: Results for Fixed Effects Model for ROIC for Companies that Deal with Predominantly Services

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	0.203274	0.150517	1.350504	0.2066
X1	-0.000647	0.000740	-0.874235	0.4025
X2	0.019571	0.033462	0.584880	0.5716
X3	-0.321914	0.360667	-0.892551	0.3931
X4	0.698337	0.771577	0.905078	0.3867
X5	-0.109803	0.178682	-0.614519	0.5526
Effects Specification				
Cross section fixed (Dummy Variables)				
R-Squared	0.588363	Mean Dependent Var.		0.168372
Adjusted R-Squared	0.217889	S.D. Dependent Var.		0.042399
S.E. of Regression	0.037496	Akaike Info Criterion		-3.422298
Sum Squared Residuals	0.014060	Schwarz Criterion		-2.924432
Log Likelihood	44.22298	Hannan-Quinn Criterion		-3.325109
F-Statistic	1.588136	Durbin-Watson Statistic		1.725338
Prob(F-Statistic)	0.240490			

All these results are not consistent with Mohamad and Saad [8] also Pouraghajan and Emamgholipourarchi [6] in terms of CCC, DTAR and CACLR and their relationship with ROA and ROIC, with exception of companies who deal with mainly goods where their results showed a negative relationship between CACLR and ROA. The results nonetheless are in alliance with Pouraghajan and Emamgholipourarchi [6] for CATAR and CLTAR having a no significant relationship with ROA and ROIC. As for the CCC not having a significant relationship with the profitability variables, the results are consistent with Al-Shubiri and Aburumman [5] where their study found no significant relationship between ROA and CCC. Furthermore, Eljelly [9] imply in their study that the CCC loses its importance in labor-intensive markets, which includes services that is consistent with our results.

Given the fact the most researchers have found that the CCC has a significant effect on profitability as per theory, these results indicate that though such a relationship may have held true in Saudi Arabia, investors and firm policy makers have not reacted properly towards it, or that this information may not have been disseminated properly to the markets, thus leaving firms with sub-optimal working capital management policies go unpunished.

Subsequent to getting and analyzing the results, the following model represents the relationship between ROA and CACLR in companies that deal with mainly goods, considering it is the only significant relationship that came up in our analysis. The values used in the model can be shown in Table 13.

CONCLUSION

This paper, through empirical research, investigated the relationship between working capital management and the profitability of firms. The study found that there is a significant relationship between return on asset and working capital components in Saudi listed retail companies to be accepted, but only for the case of companies which predominantly deal with goods. In addition, there is no significant relationship between working capital management components and ROA and ROIC, except for companies that deal with mainly goods, where there is a significant relationship between CACLR and ROA.

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REFERENCES

Pratap Singh, H., and Kumar, S. 2014. Working capital management: a literature review and research agenda. Qualitative Research in Financial Markets, 6, 2, 173-197.

Mansoori, D. E., and Muhammad, D. 2012. Determinants of working capital management: Case of Singapore firms.

Makori, D. M., and 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.

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.

Al-Shubiri, F. N., and Aburumman, N. M. 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.

Pouraghajan, A., and Emamgholipourarchi, M. 2012. Impact of working capital management on profitability and market evaluation: Evidence from Tehran Stock Exchange. International Journal of Business and Social Science, 3, 10.

Bagchi, B., Chakrabarti, J., and Roy, P. B. 2012. Influence of working capital management on profitability: a study on Indian FMCG companies. International Journal of Business and Management, 7, 22, 1.

Mohamad, N. E. A. B., and Saad, N. B. M. 2010. Working capital management: The effect of market valuation and profitability in Malaysia. International Journal of Business and Management, 5, 11, 140.

Eljelly, A. M. 2004. Liquidity-profitability tradeoff: An empirical investigation in an emerging market. International journal of

commerce and management, 14, 2, 48-61.

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