Relationship between Working Capital Management and Profitability

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Abstract: The aim of this research is to find the impact of working capital management on firms' profitability. The data of the thirty companies listed in KSE was taken as a sample from two sectors cement and foods for the period of 2007 to 2011.The profitability is measured through two variables; Return on Assets and Return on Equity, while the independent variables are Average collection period, Inventory turnover in days and Current Ratio. Regression and Correlation analysis was employed. The result shows that there is positive and significant relation between profitability and current ratio and Average collection period while negative and insignificant relation between profitability and inventory turnover in days.

Key Words: Capital Management, Data, Finance, Correlation, Stock Exchange.

Introduction:

Working capital management is the lifeblood of business and every manager's primary task is to help keep it flowing and to use the cash flow to generate profits .Therefore Working capital management is a very important component of corporate finance because it directly affects the liquidity and profitability of the firm (Rehman & Nasr, 2007). It investigates the relationship between the working capital management and the firms' profitability. Efficient management of working Capital is one of the pre-conditions for the success of an enterprise. Investments in current assets are inevitable to ensure delivery of goods or services to the ultimate customers and a proper management of same should give the desired impact on either profitability for this reason significant amount of funds is necessary to invest permanently in the form of various current assets. If resources are blocked at different stage of supply chain, this will prolong cash operating cycle. Although this might increase profitability (due to increase sales), it may also adversely affect the profitability. If the costs tied up in working capital exceed the benefits of holding more inventories or granting more trade credit to customers (Khan & Jain).

The management of operating cycle is the most important part of the company's financial management. The most efficient allocation of capital an Organization that to meet the need for profitability, the management of circulating assets aims at achieving the operating cycle with a minimum level of circulating assets, and the management of circulating liabilities aims at the lowest cost of procuring the necessary capital. In order to decrease risk, determining the required circulating assets (stocks, debts and liquidities); determining how to finance the required circulating assets (working capital, operating liabilities: suppliers, creditors) A popular measure of working capital management is the cash conversion cycle, that is, the time span between the expenditure for the purchases of raw materials and the collection of sales of finished goods.

Objectives of the Research:

The main objective of this research is to find the impact of effective working management on the profitability of the firms listed in Karachi Stock Exchange.

Hypothesis:

The study will test the following hypothesis

H1: Working Capital Management has no Impact on firms' profitability

H2: Working Capital management has an impact on firms' profitability.

Scope of the research:

This research will be conducted on listed companies of KSE so the results are applicable to KSE listed companies only.

Literature Review:

Danuletiu (2010) In their study tried to find out relationship between the efficiency of working capital management and profitability. They collected Data from the financial statements of large companies Alba County and taken sample of 20 annual financial statements of the company's period 2004-2008using correlation analyses. Three politics of management operating cycle with different effects on profitability and risk. 1.

Offensive/aggressive policy 2. Defensive/ protective policy 3. Balanced/ optimal policy. Variables use Net Working Capital, Working capital necessary, Net Treasury. As a result there is a weak negative linear correlation between Working capital management and Profitability.

Sagir *et al (2011)* their study found that the working capital management effect on firm's profitability. Working capital management is very important component of corporate finance because it directly affects the liquidity and profitability of the Firm. They used a sample textile industry at KSE.There are three categories of whole textile industry at KSE, textile spinning, textile weaving and textile composite and selected 60 large and well-known textile companies listed at KSE, for a period from 2001 – 2006 . These are those firms which represent the overall

	ACP	ITID	CR	ROA	ROE

industry Variables used No. of days A/R, No. of days Inventory, No. of days A/P, and Cash Conversion Cycle. Purpose to establish a relationship that is of statistical significant which showed that there is statistically negative significance between profitability and working capital management finally, ordinary least regression analysis found a negative relationship between the Working capital management and profitability.

Gondal (2013) in his study they discuss the Working capital management of Pakistan cement sector. Pakistan exporting cement to India, middle east and Africa therefore it is need to properly operate the working capital management for success and failure KSE 21 cement companies taken for the purpose to know that how working capital management directly effect to profitability there for it is use quantitative method for research which result negative relationship between them it is a big issue because it is providing basic material which need for construction from starting to ending. many companies faces to loss like India, Turkish due to manager wrong policies which highly effect to profitability in day to day operation there for regression analysis were used for all the ratio's and finally companies are strongly compete with each other and limited companies are investment and they make monopoly because of positive relationship between growth and expected profitability.

Muhammad *et al* (2010) *l*to find out the working capital management effect on Firm's profitability therefore Working capital in business is considered as life blood. The study has been undertaken with the prime objective of analyzing the effect of working capital management on the profitability of firms. Higher amount of working capital will increase the liquidity but at the same time will create impact on profitability. In this study is used secondary data collected from listed 25 Textile industry in Karachi stock exchange for the period of 2001-2006. The effect of Working capital management on profitability is tested using the panel data methodology. Which based on correlation and Regression analysis and show that there is a strong Positive relationship between profitability and cash, accounts Receivable and, inventory and negative Relationship with accounts payable? Objective of any Firm is to maximize profit. The fundamental principles of working capital management are to reduce the capital employed and to improve efficiency.

Research Methodology:

Data and Sample:
Population of the study will be selected from two sectors cement and foods listed at Karachi Stock Exchange. In the KSE there are taken as a sample 15 companies from cement sectors and 15 companies from foods respectively. The data has been collected from the database provided by Karachi Stock exchange, which includes financial statements and annual reports regarding listed public limited companies. Therefore selected data of the companies listed at Karachi stock Exchange for a period of five years from 2007 – 2011 from both industry as a sample. These are those firms which represent the overall industry.

Dependent Variable:
The dependent variables are following
Return on Assets
Return on Assets (ROA) =Net Income /Total Assets.
Return on Equity
Return on equity (ROE) = Net income/Equity.
 Independent Variables
The independent variables are following
Average collection period, Inventory turnover in days, Current Ratio
Statistical tool Instrument used in this research is Regression and Correlation analysis. Regression analysis is used to investigate the impact of Working Capital Management on corporate profitability. Therefore table
Table 1 Descriptive Statistics:-

Mean	10.66870241	57.00133684	1.154563	0.039027598	-1.08001
Standard Error	1.014361515	6.150029803	0.101971	0.009141766	1.340989
Median	7.554986998	32.31192769	0.856911	0.020181872	0.107442
Mode	0	68.01134059	0.761208		
Standard Deviation	12.42334064	75.3221746	1.248884	0.111963315	16.4237
Sample Variance	154.3393926	5673.429987	1.559711	0.012535784	269.7378
Kurtosis	11.80337274	26.6679749	20.31182	2.152942514	145.5775
Skewness	2.765845467	4.30402274	4.090573	0.289768891	-11.9562
Range	80.60213052	643.8305076	9.080416	0.820856288	222.9192
Minimum	0	1.224292562	0.100107	-0.419319949	-199.417
Maximum	80.60213052	645.0548002	9.180523	0.401536339	23.50268
Sum	1600.305361	8550.200526	173.1844	5.854139634	-162.001
Count	150	150	150	150	150

Model Summary and ANOVA has been used to check the regression and significance of all variables used in the study. Correlation analysis is used to measure the degree to which any two variables vary together as known is Correlation. We have analyzed the data by using correlation, Model Summary and ANOVA

Results and Discussion:
Above table gives the descriptive statistics for variables that are used in this study. Their total profitability depends upon how efficiently they manage their resources particularly all those which are used for the daily operations of the firm. If they manage their current assets as well as current liabilities, then it are sure that they are going to get profit, can compete their competitors and can capture maximum market shares.ACP stands for Average Collection Period. ITID stands for Inventory turnover in days. CR stands for Current Ratio. ROA (Return on Assets) and ROE (Return on Equity).

Mean: - Average Collection Period is need 10 days, Inventory turnover in days is required 57 days to convert in cash CR is (1.154563), ROA Mean is less than 1 (0.039027598), and ROE is negative (-1.08001).

Standard Error: - Average Collection Period is 1 day, Inventory turnover in days is 6 days is need to convert in cash and ROE is positive above the Zero in the other hand CR is (0.101971) and ROA is positive but less than Zero.

Median: - Average Collection Period is 7 days and Inventory turnover in days is 32 days is need to convert in cash, CR (0.856911), ROA and ROE is less than 1

Mode: - Average Collection Period is Zero, Inventory turnover in days is 68 days, CR vale is less than 1 and the value of ROA and ROE is nil.

Standard Deviation: - Average Collection Period is 12 days; Inventory turnover in days is 75 days is needed CR value is (1.248884) ROA is less than 1 and ROE is (16.4237).

Sample Variance: **-** Average Collection Period is 154 days; Inventory turnover in days is 5673 ROA is less than 1 and ROE is (269.7378).

Kurtosis: **-** Average Collection Period is 11 days; Inventory turnover in days is 26 days is needed CR value is (20.31182) ROA is (2.152942514) and ROE is (145.5775).

Skewness: **-**, Average Collection Period is 2 days; Inventory turnover in days is 4 days is needed CR value is (4.090573) ROA is (0.289768891) ROE is less than 1 and the value of ROE is negative.

Range: **-** ACP value is (80.60213052), ITID value is (643.8305076), CR is (9.080416) ROA is less than 1 therefore it is (0.820856288) and ROE value is (222.9192).

Minimum: **-** Average Collection Period is 0, ITID is (1.224292562), CR and ROA value are less than 1 and ROE is negative.

Maximum:- Average Collection Period is almost 81 days and Inventory turnover in days is 645 days is need to convert in cash, CR is (9.180523), ROA is less than 1, but positive (0.401536339) ROE value is positive(23.50268).

Sum:- - Average Collection Period is 1600 days and Inventory turnover in days is 8550 days is need to convert in cash, CR is (173.1844), ROA is (5.854139634) Only ROE is negative (-162.001)

Count: - 150 in the entire above table

	AVERAGE COLLECTION PERIOD	INVENTORY TURNOVER IN DAYS	CURRENT RATIO	ROA	ROE
AVERAGE COLLECTION PERIOD	1	0.1227	-0.0092	0.1130	0.0593
INVENTORY TURNOVER IN DAYS	0.1227	1	-0.0110	0.0005	-0.0295
CURRENT RATIO	-0.0092	-0.0110	1	0.2851	0.0565
ROA	0.1130	0.0005	0.2851	1	0.1445
ROE	0.0593	-0.0295	0.0565	0.1445	1

Table 4.2 Pearson Correlation Results:

In above Table 4.2 Average collection period relationships with Average collection period is perfectly positive because it is 1, so therefore it has strong positive relation. Average collection period with Inventory turnover in days has weak positive relation (0.1227). Average collection period with Current ratio is weak negative relation (-0.0092). Average collection period with ROA (0.1130) and ROE (0.1130) weak positive relation. Inventory turnover in days, relationship with Average collection period is positive weak. Own self perfect positive relationship Inventory turnover in days with Current ratio weak negative relation weak positive relation with ROA and weak negative with ROA. Current ratio relation with Average collection period and Inventory turnover in day's weak negative, and Current ratio with ROA and ROE weak positive. Return on Asset relation with Average collection period, Inventory turnover in days, Current ratio and ROE weak positive. Return on Equity relation with Average collection period, Current ratio, and ROA have weak positive relationship and weak negative relationship with Inventory turnover in days.

Table 4.3: Regression Results with Dependent Variable: R.O.A.
Summary Output

R square	Adjusted R square	Standard error	Observations
0.094831932	0.076232589	0.107611099	150

ANOVA

	Df	SS	MS	F	Significance F
Regression	3	0.1771301	0.059043	5.098671	0.002196644
Residual	146	1.690701709	0.01158	0	0
Total	149	1.867831809	0	0	0

Variable	Coefficient	Std. error	t-value	p-value
Constant	-0.000941316	0.015379717	-0.06121	0.951279607
AVERAGE COLLECTION PERIOD	0.001054965	0.000715046	1.475379	0.142263946
INVENTORY TURNOVER IN DAYS	-1.58597E-05	0.000117939	-0.13447	0.893213064
	0.025652854	0.007059633	3.633738	0.000386203

$R^2 = 0.094831932$, F-value $=5.098670856$, P-value $= 0.002196644$

The results of Table 4.3 shows that Average collection period is positively and insignificant correlated with dependent variable R.O.A. because the value of T-Test statistics is (1.475379) which is less than **2**. Inventory turnover in days is also insignificant correlated with dependent variable R.O.A. because t its value is less than 2 and the value of. Inventory turnover in days is negative as well as (-0.13447). Current ratio is significant correlated with dependent variable R.O.A (3.633738) because T value is greater than 2.

To check the goodness of model (F-Test)
Null Hypothesis: The fit is good

Alternate: The fit is not good

Since the value of P in ANOVA table is greater than 0.002 so we accept **Null hypothesis** The model is t good because there is **F Value** is greater than *Significance F value* like **5.098670856>0.002196644** therefore this model should be accept.

Table 4 Regression Results with Dependent Variable R.O.E

Variable	Coefficient	Std. error	t-value	p-value
Constant	-2.393175527	2.361600514	-1.013370175	0.312559818
AVERAGE COLLECTION PERIOD	0.085185832	0.109797472	0.775845115	0.439095391
INVENTORY TURNOVER IN DAYS	-0.00803228	0.018109877	-0.443530334	0.658038759
CURRENT RATIO	0.746774132	1.084027324	0.688888661	0.491986613

R^2 = 0.00812929,F-value =0.398867974, P-value = 0.75401331

The results of Table 4 show that Average collection period is insignificant because its value is (0.775845115) less than **2.** Inventory turnover in days is also insignificant its value is less than 2 and the value of Inventory turnover in days is negative as well as (-0.443530334). Current ratio is insignificant because its value is (0.688888661) less than **2.**

To check the goodness of fit of model (F-Test)
Null Hypothesis: The fit is not good.

Alternate fit is good.
Since the value of P in ANOVA table is less than 0.75 so we reject **Null hypothesis**. The model is not good because there is **F Value** is smaller than *Significance F value* like **0.398867974 <0.75401331** therefore this model should be rejected.

Conclusion：
The aim of this research is to find the impact of working capital management on firms' profitability. The data of the thirty companies listed in KSE was taken as a sample from two sectors cement and foods for the period of 2007 to 2011.The profitability is measured through two variables; Return on Assets and Return on Equity, while the independent variables are Average collection period, Inventory turnover in days and Current Ratio. Regression and Correlation analysis was employed. The result shows that there is positive and significant relation between profitability and current ratio and Average collection period while negative and insignificant relation between profitability and inventory turnover in days.

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