

Impact of Working Capital Management on the Financial Performance: A Case Study of the Automotive Industry of Pakistan

Abstract

Aim: The current research aims to examine the impact of working capital management on the financial performance in the automotive industry of Pakistan

Method: The data is gathered from secondary sources where the annual reports of the listed automotive companies of Pakistan are accessed. The total numbers of companies that are chosen to be analyzed in the research are 12. The data is collected over five years, beginning in 2016 and ending in 2020. ROA and ROE are the variables of financial performance whereas the cash conversion cycle (CCC) represents the working capital management.

Findings: The regression analysis technique is conducted to evaluate the results in which there are two models involved in the study. The first model represents the results of ROA where it was revealed that CCC and quick ratio has a significant effect. However, the coefficient value of CCC suggests that it does not cause a major influence on ROA. While referring to the second model, CCC and financial leverage were determined to have a significant and negative influence on ROE. Hence, this suggests that working capital management has a slight effect on the performance of the automotive companies of Pakistan.

Keywords: *Working capital management; financial performance; Automotive industry; Automotive sector; Pakistan; Cash conversion cycle; ROA; ROE*

1. Introduction

As per Le et al (2018), every organization requires enough liquid assets in the short to medium term to maintain the flow of cash needed for operational processes. Nevertheless, this would not mean that working capital is only important in the shorter term; an adequate liquidity resource is also beneficial to ensure the professional's long-term viability. The firm's overall capital is partitioned into fixed capital as well as working capital. The working capital panel has frequently been neglected, resulting in suboptimal usage of not only cash flow but also capital investment

working capital management. By concentrating on strangles, such attempts would concurrently stimulate the flow of financial resources. This working capital provides in-house liquidity management and profitability (Kengatharan, 2018).

According to Jana (2018), working capital management is a crucial aspect of short-term financial planning. It is a key function of financial management that aids in the maintenance of an ideal balance between the various elements of working capital. By decreasing the amount of invested capital bound up in current assets, businesses can decrease their financing expenses and increase the available funds for promising investment. In a wider sense, as per Sensini and Vazquez (2021), current assets are recognised as an essential factor of a firm's asset value. The current study contains an empirical analysis of the management of working capital in Pakistan's automotive industry. For theoretical underpinnings, the working capital's scope is very wide and broad-based. The significance and classification of working capital, as well as numerous ideas, have come within the scope of this research.

According to Alvarez et al (2020), the efficient management of working capital aspects is critical to a company's survival. Management of inventory, receivables, and accounts payable decision making are essential to a company's success. The method of managing the aspects of working capital necessitates extreme caution when it comes to managing short-term debts and assets, and appropriate management necessitates aims to strike a balance among seeking to avoid unproductive working capital on the one hand and attempting to avoid the business risks failure to reach its short-term duties on either, which is recognised as the trade-off between liquidity and profitability (Mohamad et al., 2010). As a result, the aim of the current research is to examine the impact of working capital management on the financial performance in the automotive industry of Pakistan. The research objectives can be represented as follows:

- To explore the prominence of working capital management for the capital intense industries such as automotive industry
- To investigate the effect working capital management on the financial performance in the automotive industry of Pakistan

- To provide recommendations for the automotive companies in Pakistan and practical implications for future research

2. Literature Review

According to Sensini (2020), working capital management is characterized as a sequence of choices that govern the utilisation of a firm's short assets and debts is based on investment stages, including the usage of them in a way that reaches an equilibrium between profitability and liquidity management. The primary goal of working capital management is to strike a balance for both two critical elements: maintaining an appropriate amount of liquid resources to cover the dangers of financial difficulties and investing in less financial cash to attain an adequate return. Similarly, as per Ren et al (2019), working capital management is a crucial part of organisational effectiveness because it has a significant effect upon both profitability and liquidity targets. As a result, management strives to achieve the ideal liquidity position. Management's dedication to a conservative ideology in the management of working capital necessitates the maintenance of an elevated standard of current assets. This would therefore lessen liquidity errors and increase the firm's ability to fulfil operational needs, but it would also decrease profits and result in missed alternative investments and high potential costs (Nguyen et al., 2020).

The study of Altawalbeh (2020), found that in comparison, the organisation strives for an active strategy in the management of working capital that necessitates preserving a low amount of current assets in order to achieve an increased profit level, which exposes the company to high liquidity threat. Thereby, the function of productive working capital management involves overseeing liquidity position in order to ensure consistency between avoiding financial distress on the one side and maximising the utilisation of current assets on another. More particularly, the effectiveness of the finance manager in handling stock, receivable accounts, and payable accounts is regarded as an influencer. The low capital decided to invest in inventory and debt holders would then result in an incapability to bring out every day operational needs, resulting in limited sales and therefore reduced profits, that might eventually influence the firm's viable business. In addition, as per Boopathi and Leeson (2016), managerial achievement in management of working

capital is dependent on recognising the essence of the communication with both current assets and tradable liabilities, which can be shaped by a multitude of considerations, along with the natural surroundings of the business sector, raw material supply constraints, and financing accessibility.

According to Kasozi (2017), management of working capital is a topic that has sparked much discussion and persists to capture the interest of academics. Despite its significant contribution in representing and directing operational efficiency, there really is no agreement on the working capital management's influence on monetary performance. Moreover, Wanguu and Kipkirui (2015) found that every business requires working capital to bring out day-to-day processes, which really is necessary for the continuation of the business. Major decisions related to current assets and current liabilities has an impact on cashflow and investment growth under the worst scenario, a company may go insolvent as a consequence of bad working capital organising elements.

Malik and Bukari (2014) conducted research on a data set of 38 Pakistani companies from the cement and chemical industries, utilising average inventory days, payables, receivables, and conversion cycle to evaluate the management of working capital. The study determined that the cash conversion cycle is adversely related with firm's performance. Similarly, in the same perspective, Mohammad et al. (2012) investigated the association between working capital management and profitability of the firm in 25 textile enterprises of Pakistan. They utilised the absolute number of accounts receivable, accounts payable, as well as inventory to quantify working capital management, and the findings confirmed a favourable connection between inventory levels, receivable accounts, and profit growth.

Alavinasab and Davoudi (2013) utilised a sample size of 147 listed firms on the stock exchange of Tehran to explore the association between working capital management and firm's profitability; they discovered that firm's valuation is unfavourably related to the duration of cash conversion as well as total debt ratio. Abuzayed (2012) studied the impact of working capital management on a firm's financial performance in Jordan, using gross operating income as a dependent variable to represent profit levels. The findings revealed a negative relationship between

average number collection period, days of average inventory, and profitability, as well as a positively related between average day's payables and profit growth. The study concludes that simultaneously keeping a low inventory and shortening the payment period, as well as broadening the payment terms, increase profits.

Bhagchi et al., (2012) investigated the effect of working capital management on profit growth. Following the completion of consistency tests, Pearson's Correlation, as well as panel regression, it was discovered that there is a negative and significant relationship between working capital management and the profitability of the firm. Furthermore, Kulkanya (2012) demonstrates an adverse association with both gross operating income and inventory conversion duration and collection period of receivable due to the limitations of the cycle of cash conversion.

3. Methodology

The main focus of the research is to examine the impact of working capital management on the financial performance in the automotive industry of Pakistan. The design of the research is resolute to be quantitative related to the objective and aim, where it is attributed with numerical quantification and statistical analysis. In terms of data collection, a secondary source is an appropriate approach for collecting pertinent data for the study. Because the research is primarily concerned with Pakistan, the data has been collected from Pakistan's listed automotive companies. The information is retrieved from financial reports, which encompass valuable aspects of the firm's working capital management and financial performance. The 12 automotive companies in Pakistan are the total number of companies chosen to be analyzed. The data is collected over five years, beginning in 2016 and ending in 2020.

While referring to the variables, the component that represents the working capital management is the cash conversion cycle. In addition to this, several variables are also investigated in the research which comprises capital structure and firm size. The determinants used for evaluating the capital structure are the current ratio, quick ratio, and financial leverage. On the other hand, the determinant that is used for firm size is the log of total assets. The financial performances that are investigated in the research are the ROA and ROE. Concerning the analysis

of the data, it is conducted through E-views where several statistical techniques are incorporated. The first technique is descriptive statistics where the purpose of the tool is to summarize the raw data. The second technique is the correlation analysis which investigates the connection of the variables with each other. The third test is the preliminary analysis where the purpose of the test is to conduct Hausman testing. The Hausman testing is mainly conducted to determine which type of regression model is appropriate for the research as there are two regression models in ordinary least square (OLS) i.e. fixed and random effect model. As for regression analysis, two models are involved in the study which is following that is developed as per the variables:

$$ROA = a + \beta_1 CCC + \beta_2 CR + \beta_3 QR + \beta_4 FL + \beta_5 FS + \varepsilon \text{ ---- (1)}$$

$$ROE = a + \beta_1 CCC + \beta_2 CR + \beta_3 QR + \beta_4 FL + \beta_5 FS + \varepsilon \text{ ----- (2)}$$

4. Results and Findings

4.1 Descriptive Statistics



Table 1 reflects the descriptive statistics where the raw data that is gathered is summarizing into meaningful and interpretative formation. The data represents the automotive company of Pakistan for 5 years recent period which is from 2016 – 2020. The total listed companies of automotive comprise of 12 which leads to an observation of 60. While referring to the cash conversion cycle, its mean value is computed as 175.93 which reflects that it takes the automotive company of Pakistan around 176 days for converting the investments and other resources into cash. The current ratio mean value is computed as 1.504 which indicates that the average number of automotive companies in Pakistan can manage their short-term obligation. However, the quick ratio means the value is computed as 0.88 and is below 1; therefore, this shows that the average number of an automotive company in Pakistan is not able to manage the short-term obligations through rapid

convertible assets. The financial leverage is computed as 2.99 which indicates that the average number of automotive companies relies high on debt. Lastly, the mean value of ROA is computed as 0.149 which indicates that it generates 14.9% of the profits as per the assets.

Table 1: Descriptive Statistics

Descriptive Statistics	Cash conversion cycle	Current Ratio	Quick Ratio	Financial leverage	Firm's Size	ROA	ROE
Mean	175.938	1.504	0.888	2.999	9.136	0.149	0.218
Maximum	1451.847	3.550	2.130	27.260	11.314	0.871	1.403
Minimum	6.300	0.210	0.190	1.210	5.453	-0.194	-0.994
Std. Dev.	244.465	0.671	0.447	3.354	1.498	0.193	0.391
Observations	60	60	60	60	60	60	60

4.2 Correlation Analysis

Table 2 reflects the correlation analysis where its function is to assess the connection of the variables. There are two main variables involved in the research which are ROA and ROE. Concerning ROA, it is determined to have a significant connection with all the factors which are CCC, current ratio, quick ratio, financial leverage, and firm's size based on the p-value. CCC and financial leverage have negative interconnection with ROA as its coefficient value is computed as -0.535 and -0.220. On the other hand, the current ratio, quick ratio, and firm size have positive interconnection with ROA as its coefficient value is calculated as 0.2555, 0.312, and 0.290, respectively. In respect to ROE, it is found to have a significant and negative connection with CCC and financial leverage based on the coefficient value which is computed as -0.573 and -0.395 whereas firm size has positive and significant interconnection with ROE as the value is 0.334.

Table 2: Correlation Analysis

Correlation	Cash conversion cycle	Current Ratio	Quick Ratio	Financial leverage	Firm's Size	ROA
Current Ratio	-0.180	1.000				
	0.170					

Quick Ratio	-0.114	0.821	1.000			
	0.385	0.000				
Financial leverage	0.467	-0.282	-0.222	1.000		
	0.000	0.029	0.088			
Firm's Size	-0.647	0.143	0.188	-0.372	1.000	
	0.000	0.275	0.150	0.004		
ROA	-0.535***	0.255**	0.312**	-0.220*	0.290**	1.000
	0.000	0.049	0.015	0.091	0.024	
ROE	-0.573***	0.052	0.095	-0.395***	0.344***	0.855
	0.000	0.691	0.473	0.002	0.007	0.000

4.3 Preliminary Analysis

Table 3 represents the Hausman testing where it is a technique for OLS regression to determine which model of regression is feasible such as random or fixed-effect model. The null hypothesis of the Hausman testing is that the random effect model applies to the regression technique (Imran, Zhong, and Moon, 2021; Khan and Chaudhry, 2019). As indicated in the results, the Hausman is tested for both the models which are ROA and ROE. The p-value is computed as 0.336 for ROA and 0.938 for the ROE model. Hence, the p-value is greater than 0.05 indicates that the acceptance of the null hypothesis. Therefore, the random effect model applies to both models for evaluating the variable's influence.

Table 3: Preliminary Analysis - Hausman

	Hausman's P-value	Hypothesis	Output
ROA	0.336	Null Hypothesis is accepted	Random effect model
ROE	0.938	Null Hypothesis is accepted	Random effect model

4.4 Regression analysis – ROA (Random effect)

The first model represents the evaluation of ROA in which the random effect model is conducted based on the Hausman testing. The main variable representing the working capital management is the cash conversion cycle. As per the results provided in Table 4, the R-square is computed as 0.316 which suggests that the variance that is captured in the model is 31.5%. Moreover, the probability value is calculated as 0.001 which is below 0.05; therefore, this indicates

the model is significant. Moving to the main part, it is determined that the cash conversion cycle [B=0.000; p=0.000] and the quick ratio [B=0.225; p=0.023] have a significant and positive influence on ROA. However, the coefficient value of CCC suggests that it does not cause a major



influence on ROA. Based on the results, it can be indicated that the improvement of the quick ratio would result in causing a positive change to ROA of the automotive companies of Pakistan by 0.225 units.

Table 4: Random Effect Model - ROA

ROA	Coefficient	Std. Error	t-Statistic	Prob.
Cash conversion cycle	0.000***	0.000	-4.177	0.000
Current Ratio	-0.106	0.066	-1.618	0.112
Quick Ratio	0.225**	0.096	2.335	0.023
Firm's Size	-0.032	0.027	-1.195	0.237
Financial leverage	-0.001	0.005	-0.120	0.905
C	0.474	0.261	1.821	0.074
R-squared	0.315			
Adjusted R-squared	0.252			
F-statistic	4.965			
Prob(F-statistic)	0.001			

*** Significance at 1%; ** Significance at 5%; * Significance at 10%

4.5 Regression analysis – ROE (Random effect)

The second model represents the evaluation of ROE in which the random effect model is again applied as per the Hausman testing. As per the results provided in



Table 5, the R-square is computed as 0.327 which suggests that the working capital management, financial leverage, and firm size explain or predict ROE by 32.7%. Moreover, the probability value is calculated as 0.001 and is below 0.05; therefore, this indicates the model is

significant. Moving to the main part, it is determined that the cash conversion cycle [B=-0.001; p=0.000] and financial leverage [B=-0.027; p=0.023] have a significant and negative influence on ROE. Therefore, the results suggest that every unit change to CCC and financial leverage would result in causing a negative change to ROE by -0.001 and -0.027 units in the automotive sector of Pakistan.



Table 5: Random Effect Model - ROE

ROE	Coefficient	Std. Error	t-Statistic	Prob.
Cash conversion cycle	-0.001***	0.000	-3.090	0.003
Current Ratio	-0.208	0.137	-1.517	0.135
Quick Ratio	0.191	0.201	0.953	0.345
Firm's Size	-0.003	0.058	-0.052	0.959
Financial leverage	-0.027***	0.010	-2.734	0.008
C	0.580	0.563	1.030	0.308
R-squared	0.327			
Adjusted R-squared	0.264			
F-statistic	5.242			
Prob(F-statistic)	0.001			

*** Significance at 1%; ** Significance at 5%; * Significance at 10%

5. Conclusion

The purpose of this article is to investigate the effects of working capital management on financial performance in Pakistan's automotive industry. Previous research discovered a negative relationship of working capital management on financial performance. This article's results are consistent with those research results. The findings of this study imply that management teams can increase a firm's financial performance by ensuring proper working capital elements; management can enhance the company's financial efficiency by decreasing the collection period and average inventory age to a reasonable minimum standard. According to the findings, firms with low profitability financial performance take longer to resolve their obligations. The automobile industry is critical to the Pakistan's economy. Furthermore, automotive manufacturers may

embrace better strategy in order to attract consumers and retain the current consumers by delivering great deals, prices, and a greater number of sale support at the consumers' door-step.

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