

Does Working Capital Management Contribute to the Profitability of Manufacturing Sector? Evidence from Pakistan

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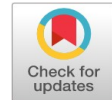
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Abstract: The aim of this study is to analyse the determinants that influence the companies' profitability in the manufacturing industry of Pakistan. The tool for data collection used in our research study is secondary data, which consists of 10-year financial data from 2012 to 2021. This research used descriptive statistics, OLS, random effect, and fixed effect models to define the sample and analyse the impact of working capital in the automobile sector. The results indicated that in the case of automobile firms, working capital management proxies are dominant, which significantly affects on the firm's performance. The findings evaluated that sales growth significantly affects a firm's performance. Lastly, the outcomes revealed that a firm's size has no significant effect on the firms' profitability. In conclusion, it is argued that effective working capital management leads to better financial performance. The research would be beneficial to business investors and managers in Pakistan's non-financial sector. This also provides a guideline for investors when making investment decisions.

Keywords: Working capital management, Automobile sector, Firms profitability, Firm size, ROA

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INTRODUCTION

In recent years, Working Capital has attracted considerable attention as a method for managing the funding that allows a company's management to meet its day-to-day obligations. Due to its effect on a company's liquidity and profitability, Working Capital Management (WCM) is commonly connected with corporate finance (Arnaldi et al., 2021; Fitriana, 2021). Similarly, these impacts are often a result of organisations' working capital.

Managers keep in touch with risk minimisation strategies and, therefore, make different kinds of routine operational softness, which keep organisations on the safe side and keep it in touch with profit maximisation. Improper management of working capital is a major reason for the failure of most small businesses in developed and underdeveloped countries (Lefebvre, 2022). For every kind of successful organisation, it is important to understand working capital properly. As it directly affects the profitability and liquidity of the particular firm, it is considered as not less than management of fixed capital, even though it deals with current liabilities and current assets in all aspects (Kayani et al., 2020).

Academics have undertaken a substantial study on working capital management and its effect on corporate performance. A vast number of academics identified substantial correlations between working capital management and corporate success. Managers employ a variety of approaches to assess working capital, many of which are not based on well-established financial concepts but instead rely on more arbitrary criteria or models (Wang et al., 2020). Thus, the contradictory findings in the prior literature suggested a knowledge vacuum that must be filled in order to have a better understanding of working capital management and its influence on company profitability (Haralayya, 2022).

The establishment of more accurate instruments for analysing firm financial performance is recognised as a critical foundation of contemporary financial research. Financial performance measurement is critical in any business because it enables managers to determine the extent to which corporate goals and objectives are being

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met; it assists managers in making decisions and implementing them; and it provides detailed information about the firm's financial position and shareholder wealth creation (Agyemang et al., 2019). However, accounting performance indicators such as NP, NOPAT, ROI, and EPS have been attacked for their failure to effectively represent an organisation's entire cost of capital, meaning that accounting income cannot be used to gauge corporate success or to interpret firm value consistently (Ilham, 2020). Thus, a significant gap occurs in that both economic values added (EVA) and Tobin's Q are overlooked as indicators of a car company's performance.

Tobin's Q is a market performance criterion that establishes the market worth of each dollar of the replacement cost of assets, and EVA's basic premise is to transform accounting profit reported in financial statements into economic profit by reducing the cost of capital. This leads to new discussions and the creation of a research gap. Financial managers spend a lot of time trying to figure out what drives working capital and how much of it they should have on hand at any one time. Making money at the price of liquidity may have a negative influence on the company's financial stability (Faria et al., 2022; Gamkrelidze, 2019). As a result, a balance between the objectives of the two companies is necessary. In order for Pakistan to flourish, listed firms on the stock market are important. Working capital cannot be kept at a minimum in the absence of operational limitations. In order to sustain future revenues and sales, businesses must optimise and safeguard their working capital. Different scholars have worked on this topic worldwide by employing different sector data. There is a shortage in Pakistan in a specific field, notably on the vehicle sector, if any of the studies that have been done is out to date (Azam, 2022).

Numerous scholars have found conflicting findings about the effect of WC on company performance in the literature. Altaf and Shah (2019) revealed a favourable association between corporate performance and WC. On the other hand, Iqbal et al. (2020), as well as Siraj et al. (2019), examined the significant effect of WC on company performance. WCM has been utilised before in studies such as the effect of WCM on financial performance (Ilham, 2020), the impact of WCM on profitability and sustainable development (Kumar et al., 2019), and the impact of WCM on financial and values (Arcuri & Pisani, 2021). To the best of the researcher's knowledge, relatively few studies exist that examine the influence of working capital management and EVA.

The study's findings will be useful to non-financial sector investors and managers in emerging economies. Investing decisions may also be influenced by this data. After conducting a study of WCM, the organisation's management may adopt a variety of activities. Regulatory agencies will be able to utilise the results of this study to carry out activities related to law and order in non-financial sectors. These findings might help other firms improve their WCM operations. Working capital management in the automobile industry will improve as a result of this study, according to the findings. Students, scholars, accountants, financial managers, and policymakers in Pakistan should all benefit from an economic conceptual framework. According to the findings, producers calculate their profitability in a variety of methods. Managing a company's working capital is another way to evaluate how well it is doing.

LITERATURE REVIEW

Poor techniques of working capital management hinder a company's ability to function successfully. The management of working capital is consequently a primary issue for CEOs. The majority of the research on WCM has been on the performance and profitability of WCM-using companies. Repeatedly, research demonstrates a substantial correlation between successful WCM practices and enhanced corporate profitability. Depending on the industry and the environment in which an organisation works, there is a range of connections between WCM strategies and company performance. According to Akbar et al. (2021), the after-global-financial-crisis WCM policies of the majority of organisations suggest that short-term financial goals are prioritised above long-term ones. According to the GMM approach, a concave connection exists between WCM practices and firm performance.

According to Agyemang et al. (2019), A company's liquidity may be assessed using working capital. Working capital is essential for a company's success, but it also entails extra expenditures, such as credit losses on accounts receivable and storage and shipping fees for items. In the business world, one of the most significant financial decisions is how to allocate a company's working capital (WCM). For the sake of an organisation's long-term viability, corporate financial sustainability is heavily influenced by this aspect (Arnaldi et al., 2021). It's a fundamental idea to ensure that a company can meet its short-term commitments and assets. Cash, inventory, accounts receivable, and accounts payable make up the four components of the balance sheet. A company's capacity to manage its short-term financial resources is at the heart of working capital management (Akgün & Memiş Karataş, 2020).

The objective of cash management is to maintain a consistent cash flow while reducing expenditures. The same principle applies to inventory management, which must be controlled to prevent product expiry, excessive storage expenses, and increased insurance prices (Akgün & Memiş Karataş, 2020). "Accounts receivable turnover" refers to the length of time it takes to receive payment once a transaction has been completed. Finally, accounts payable turnover is the period required for suppliers to receive payment for things acquired (Arcuri & Pisani, 2021). To achieve these goals, it is essential that each component be well managed to optimise working capital. Working capital management is, therefore a managerial concern (Akbar et al., 2021). A crucial aspect of effective working capital management for any business is ensuring that short-term obligations are fulfilled on schedule, and long-term assets are adequately insured.

Using the current ratio, you may determine whether an asset has the capacity to satisfy its current liabilities, which are commitments due in the near future. Having received a return on its assets, Ilham (2020) says that an elevated current ratio indicates that the company's profits are likewise elevated. If earnings are elevated, investors may anticipate a high rate of return. The current ratio has a beneficial effect on stock returns, according to this research (Maheshwari, 2019).

"Collection time is inversely related to the number of days before payment is due in short-run activities. There are several types of accounts that a company or organisation may give its consumers. Successful receivables management means being paid more quickly once sales are made. In return, customers have a responsibility to treat the organisation that provides the goods or services with respect. Customers that owe money are those who have done business with a company but have not yet paid for the products or services they got. Account holder management's major goal is to reduce the time it takes from the time a bid is submitted to the time an instalment is accepted" (Mielcarz et al., 2018).

Sales growth, according to Mukti and Milikan (2015) define sales growth as an increase in sales that occurs over the course of a year or on an irregular basis. Sales growth ratios have an impact on profitability, and profitability has an impact on the company's operational performance. CCC evaluates how long it takes a company to convert its investments in inventory and other resources into cash flows from sales. The majority of the cash conversion cycle raises and enhances sales, resulting in a higher profit margin and improved firm profitability. Inventory is a vital component of the cash conversion cycle and must be properly maintained to maintain a state of equilibrium. CCC is often used to measure working capital management in academic literature (Samo & Murad, 2019).

Maja (2010) generally considers EVA a useful metric since it considers the shareholder's interests. Based on the value of shareholders, EVA may be used as an indicator of the company's overall success. As a financial performance tool, Tobin's Q has been widely utilised to explain many aspects of economics. TQ has been examined extensively by a broad spectrum of scholars, including psychologists (Muhtadi, 2019; Singhal et al., 2016). According to Perera and Priyashantha (2018), TQ is defined as the sum of equity and liabilities multiplied by total assets. A company's TQ is equal to the market value multiplied by the cost of replacing its assets. It is possible to resell the company's property for a profit if the TQ is larger than one as opposed to one. Businesses with higher TQ values, according to (Fitriani, 2020), perform better over time than those with lower TQ values, which are likely to do significantly worse.

METHODOLOGY

This is an explanatory study since it demonstrates how and to what extent the independent factors impact the dependent variable. Quantitative research is a kind of study that incorporates quantitative procedures and is based on the positivist philosophy of objectivity and logical processes (Kivunja & Kuyini, 2017). WCM and performance were both analysed by applying a quantitative study methodology.

This research study's target demographic comprises twelve publicly traded firms (Naz et al., 2022). According to statistics from the Pakistan stock market, there are now 12 publicly traded automobile firms operating in Pakistan. The tool for data collection used in our research study is secondary data which consists of a 10-year financial annual report of each of the selected as our target samples. This study examined the influence of working capital in the automobile sector using descriptive statistics, OLS, random effect, and fixed-effect models. A combination of inferential statistics, correlation, and panel regression analysis was used to look into the relationship between the independent and dependent variables.

$$EVA = \alpha + \beta_1 ACP + \beta_2 CR + \beta_3 CCC + \beta_4 SG + \beta_5 FS + e$$

$$\text{Tobin's } Q = \alpha + \beta_1 ACP + \beta_2 CR + \beta_3 CCC + \beta_4 SG + \beta_5 FS + e$$

DATA ANALYSIS

Descriptive Analysis

Table 1: Descriptive statistics

Variables	Observation	Mean	SD
EVA	120	0.0999458	0.1392
TobinQ	120	0.3005917	0.1846
ACP	120	0.18635	0.1962
SG	120	0.275375	0.1805
CCC	120	1.194983	1.0199
CR	120	0.1760675	0.1972
SIZE	120	10.03541	0.0963

The aforementioned factors were explained using ten years of financial data, totalling 120 observations. The value of the mean indicates the arithmetic mean of the observations. It is the most used central tendency measure. It is frequently referred to as the mean. The mean is sensitive to values that are excessively high or small. The above table displays the mean EVA value, which is 0.0999458. Standard deviation provides information on the spread of a variable’s distribution. The standard deviation value for EVA variables is 0.1392. Tobin’s Q is another predictor of a company’s performance. The observed value is 140, showing that the average value of Tobin Q for the decade from 2011 to 2020 is 0.3005917, while the standard deviation for Tobin’s Q is 0.1846, indicating a dispersion in data linked to Tobin Q. The table also displays the means and standard deviations of proxy values for working capital management, sales growth, and the control variable.

Correlation Analysis

Table 2: Correlation matrix

	EVA	TobinQ	ACP	SG	CCC	CR	SIZE
EVA	1						
TobinQ	-0.06***	1					
ACP	0.76***	0.01***	1				
SG	-0.09***	0.37***	-0.09***	1			
CCC	0.33***	0.41***	0.21***	0.27***	1		
CR	0.51***	-0.06***	-0.40***	0.10***	0.41***	1	
SIZE	-0.13***	-0.15***	0.17***	0.02***	-0.04***	0.07***	1

The Pearson correlation coefficient, which is often shortened to Pearson correlation, shows how strongly and in what direction two continuous variables are related. The Pearson correlation gives a number called the Pearson correlation coefficient, which is written as r. Pearson’s correlation tries to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, r, shows how far away all these data points are from this line of best fit (i.e., how well the data points fit this new model/line of best fit). Its value can be anywhere from -1 to +1. A perfect negative linear relationship has a value of -1, and a perfect positive linear relationship has a value of +1. A value of 0 (zero) between two variables means that there is no connection between them.

The above table of correlation matrix indicates that majorly, there is a positive and significant correlation between the variables. Further, the table indicated a negative relationship between some variables. The table indicated that EVA has a negative correlation with Tobin’s Q (-0.0625) and a positive correlation with ACP (0.7536). Further, the table indicated that no value of r is higher than .80, that’s why there is no chance of multicollinearity in this data.

Multicollinearity Test**Descriptive Analysis**

Table 3: Multicollinearity test results

Variables	Variance inflation factor (VIF)	1/VIF
ACC	1.59	0.629382
CCC	1.32	0.757640
CR	1.28	0.779142
ACP	1.10	0.911351
Size of the company	1.04	0.960534
SG	1.27	0.7875

The preceding table displayed the VIF value. Variance inflation factor (VIF) is used to evaluate the multicollinearity of the data. According to the experts, there is no likelihood of multicollinearity data if the value of VIF is less than five. As the numbers in the table are below the threshold, there is no possibility of multicollinearity in the data, as revealed by the results.

Regression analysis of listed automobile companies:

$$EVA = \alpha + \beta_1 ACP + \beta_2 SG + \beta_3 CCC + \beta_4 CR + \beta_5 \ln SIZE + e$$

$$\text{Tobin's } Q = \alpha + \beta_1 ACP + \beta_2 SG + \beta_3 CCC + \beta_4 CR + \beta_5 \ln SIZE + e$$

Table 4: Regression analysis

Variable Name	EVA		Tobin's Q	
	Coef.	Std. T. Stat	Coefficient	T. Stat
ACP	0.4586001	0.0450***	0.0045408	11.09
SG	0.0181097	0.0457	0.2887448	3.53***
CCC	-0.01733	0.0089**	0.0808052	5.08***
CR	0.1363072	0.0476***	0.2567608	3.02***
SIZE	-0.0267559	0.0841164	-0.2322422	-1.55
_cons	0.3227136	0.8460873	2.499524	1.65
F-Stat	38.66		7.96	
R-squared	0.6290		0.3273	
Adj- R squared	0.6127		0.2978	

Note: Significant at the level of 1% shown *** significant at 5% shown **

Table 4 examine the impact of economic value added and Tobin's Q on working capital management proxies, sales growth and company size as control variables. The above table indicated that all the working capital proxies, i.e. ACP ($\beta=0.4586$, $p=0.000$), CCC ($\beta=-0.0173$, $p=0.000$) and current ratio ($\beta=0.1363$, $p=0.000$) have a significant effect on automobile sectors performance when economic value added considered as a proxy to measure firm performance. Further, the table illustrates that Sales growth and company size have an insignificant impact of a firm's performance by considering EVA as a dependent variable. Similarly, the outcomes revealed that working capital management proxies CCC ($\beta=0.0808$, $p=0.000$) and CR ($\beta=0.2567$, $p=0.000$) significantly affect automobile firms by considering Tobin's Q as a measure of firms performance. Further, the table also indicated that sales growth also positively and significantly enhances the performance of the firms.

Thus, in conclusion, it is observed that proper working capital management and sales growth are critical points affecting automobile-listed firms operating in Pakistan. Moreover, the R square value represents the model's explanatory and predictive power. According to the literature, the value of R square closer to 1 is considered good. The value of R square is 0.6290 in the case of EVA as a dependent variable and 0.3273 in the case of Tobin's Q as an outcome variable explains the predictive power of the model satisfactory. The fitness of a good model may be predicted by its F value. As the p values in both situations are less than 0.05, the findings show that the model fit value f is significant.

DISCUSSION

According to the results of this research, there is a considerable association between working capital proxies and the firm performance of listed and automobile businesses operating in Pakistan. According to the data, the current ratio has a major impact on automobile firms. Altaf (2020) found that the current ratio favours company performance, which is supported by the existing research. Kumar and Sharma (2011) found a correlation between company performance and WC. On the other side, Kumar and Sun (2020) studied the detrimental influence of WC on company performance. This study's findings provide more evidence for Marttonen-Arola et al. (2013) conclusion that liquidity, as assessed by the Current Ratio, influences the value of a company.

In addition, the research indicated that the average collection time as a proxy for working capital management has a significant and negative influence on EVA as a proxy for business performance. Still, the average collection period determines a negligible effect on Tobin's Q. Customers' payment speed. Late payments are a possible cause of bad debts, which have a negative impact on a company's financial performance. Literature supports the present study's conclusions since Lazaridis and Tryfonidis (2006) revealed a negative association between the number of days' accounts receivable and gross operational profit-based profitability. This negative finding revealed that businesses might raise their profit margins by reducing client loan terms. As a metric of profitability, Deloof (2003) observed a substantial negative correlation between the average number of days of accounts receivable and gross operating income.

The cash conversion cycle is another indicator of working capital that has a large and positive relationship with firm performance; the shorter the time it takes a business to convert its inventory into cash, the higher its predicted performance. The results of prior studies are also relevant to those of the present study. The link between EVA and CCC is predicated on net operating profit, which ought to negatively affect CCC (NOPAT increases and decreases CCC). Therefore, it is possible to assume that the shorter the CCC, the greater the EVA. Considering the relationship between liquidity and profitability, it is reasonable to anticipate that the reverse effect will occur above a certain minimum liquidity level, and a drop in CCC will be followed by a fall in EVA. The cash conversion cycle is recognised as one of the finest metrics for evaluating the performance of working capital management and its influence on the company's liquidity (Arnaldi et al., 2021; Sundar, & Al-Harhi, 2015).

According to the study's results, sales growth had a negligible impact on both performance indicators. Similar to the conclusions of prior studies, Nastiti et al. (2019) conclude that leverage considerably influences business value, although Profitability and Sales Growth do not. In addition, Kabir et al. (2021) investigate the impact of Profitability and Sales Growth on Firm Value, as modulated by leverage. According to the findings of this research, neither Sales Growth nor Profitability substantially impacts business value. Thus, Sales Growth cannot concurrently boost Company Value.

Lastly, the study results revealed that the firm's size as a control variable had no significant impact on the firm's performance. Cordeiro and Jr (2001) demonstrate no significant association between Firm size and company performance. Similarly, the study's conclusions are consistent with those of other necessary research. Their findings indicate that security analysts' projections are connected to business size, previous five-year EPS, average EPS for the industry, and the number of analysts offering forecasts, but not EVA adoption. Whited and Hennessy (2005) demonstrate that a firm's size has no significant association with Tobin's Q as a performance measure.

CONCLUSION

In conclusion, the study's findings bridge the gap of literature by stating that working capital management and sales growths are important indicators of the performance of automobile sector firms. The scope of this study is limited to 12 listed automobile firms and two non-listed enterprises. The research was limited to secondary data acquired from the PSX's yearly financial reports. The study is limited to publicly traded companies.

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