Factors Influencing the Profitability of Heavy Vehicle Industry: A Case of Pakistan

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ARTICLE INFO

ABSTRACT

The purpose of this study is to explore the influence of working capital management on the profitability of the heavy vehicle industry in Pakistan from 2005 to 2017. For this purpose, five firms were selected. There were six independent variables that included average account payable, cash conversion cycle, accounts receivable turnover, inventory turnover, and quick ratio. The size of business was used as the control variable. The dependent variables were rerun on assets and return on equity. The Panel least squares regression (PLSR) was employed to examine the relationships amongst the variables. The results revealed that most of the elements of working capital have a significant effect on return on equity and return on assets. However, the size of the business had an insignificant impact on profitability. This research study has provided basic foils to the future research studies, and guidelines to the financial managers of heavy vehicle industry that how to manage their financial portfolios for optimum profitability.

INTRODUCTION

Background of the research study

The current economic outlook of Pakistan is very positive. The GDP growth rate of the country is 5.2%; the stock exchange index has crossed the psychological limit of 50,000; the country has been included in emerging market index; poverty is reduced by more than 50% in last 15 years and the credit rating of the country is marked stable by International Rating Agencies. There are a

number of reasons for this bright picture of economy and CPEC is one of the major catalysts. China Pakistan Economic Corridor (CPEC) has brought in a massive amount of foreign portfolio investment and foreign direct investment (Associated Press of Pakistan, 2017). The CPEC is the economic corridor that is supposed to carry goods from Gawadar Port to China by Road. With the help of this route, China will be connected with the rest of the world. The Cargo will be transported from Gawadar to China by means of Road and Railway Networks. The Corridor consists of small and large highways of thousands of kilometers. The most significant element to transfer the cargo is a vehicle and especially heavy vehicles (Ministry of Ports & Shipping, Gawadar Port Authority, 2015; Mateen, 2015).

This is forecasted that the demand for heavy vehicles especially trucks, will rise substantially in order to transport cargo from one point to another. In this scenario, the role of the automobile industry in general and on heavy vehicles industry in specific is very vital for Pakistan's economy. The heavy vehicle industry in Pakistan, however, is not much developed to cope with the upcoming challenges. This is the right time to look into the issues of the heavy vehicle industry and identify the issues and impediments that hinder the progress of the industry. Thus, the heavy vehicle industry is engaged in the production of Trucks, Buses, and Tractors. There were five major firms, which were engaged in the production of buses and trucks as of 2016, and they included Hinopak Motors, Ghandhara Industries, Ghandhara Nissan, Al-Ghazi Tractors and Millat Tractors. The industry grew gradually and slowly over a period of time as the production did not rise substantially from 1995-96 to 2015-16. The overall production of buses was 474 units, which rose to 1,017 units in 2015-16 recording 114% raise. The production of trucks in 1995-96 was 2,994 units, which reached the level of 5,550 units in 2015-16 recording around 85% increase in 20 years. It shows the unsatisfactory progress of the industry pertaining to production. The total loss was Rs. -146 million in 1995–96, which reached the level of Rs. 28917.6 million profits after fifteen years (Karachi Stock Exchange, 2016).

The real challenge for the heavy vehicle industry in Post-CPEC scenario is to improve their performance in order to meet the increasing demand for heavy vehicles especially trucks. If they were unable to do so, there would be two possible threats for the economy in form of rising to import bill and the invasion of foreign firms in the local market (Ministry of Planning, Development & Reform, 2015). In this scenario, the heavy vehicle industry has a dual responsibility. The first one is to meet the increasing demand for trucks and buses. The other one is to make a survival in a highly competitive environment. In order to cope with this challenge, the industry needs to improve its performance and adapt itself in the changing environment. The most significant problem for the heavy vehicle industry is to create a balanced investment strategy for current assets and non-current assets. This strategy calls for the working capital management, which is considered as one of the most significant decisions to pertaining to financing current assets and other assets (Eljelly, 2004).

Eljelly (2004) considers the working capital management is one of most significant factors to compare the liquidity and organizational profitability. It requires the determination of the composition of and financing of current assets. According to Haq et al. (2011), such decisions directly influence organizational profitability. The net working capital is the difference between current assets and current liabilities; this depicts the ability of a firm to meet timely the short-term obligations. However, an excess of working capital may be negative for long-term strategies for investment. Similarly, the low amount of working capital may enable a firm to increase profitability. However, it may create questions on the credibility of the firm. Therefore, there must be an effective management of working capital to achieve the objectives of both profitability and liquidity (Shin & Soenen, 1998). As far as Heavy vehicle industry in Pakistan is concerned, it requires the availability of cash and current assets to meet the obligations from the vendors on time. On the other hand, it must keep an eye to plant expansion, invention and innovation and installation of new machinery. So, the management of working capital becomes a significant determinant in order to cope with the upcoming challenges in the post-CPEC scenario (Government of Pakistan, Trade & development Authority, 2016).

Thus, the preliminary objective of the undertaken study is to examine the influence of working capital along with size, sales growth, and management of debt on the profitability of heavy vehicles industry of Pakistan along with some control variables. The study is subject to various limitations. First of all, it includes firms that are listed in KSE100 (Pakistan stock exchange). Secondly, we have taken the time period from 2005 – 2017 that shows the adequacy and current time horizon of data time series. Lastly, it takes into account only those factors, which are expressed, in financial ratios pertaining to dependent and independent variables. Its scope covers all the heavy vehicles firms in Pakistan. The research would be helpful for the heavy vehicle automobile industry to address the issues of profits by effective management of working capital. The entrepreneurs would be able to address the issues of profitability by managing working capital in the competitive environment particularly in the context of CPEC (one belt one road concept of China) (Muhammad et al., 2016; CPEC Council, 2014).

1. PREVIOUS LITERATURE AND ESTIMATIONS TECHNIQUES

A substantial literature is available on the measurement of performance and the financial indicators, which affect the profitability of the industry. Thus, this section elaborates the performance measurement criteria and effects of macroeconomic variables.

1.1 Measurement of performance

Ijiri (1975) advocated that the key performance indicators should preferably be financial in nature as they are testable, concrete and precise. Though there is a long list of financial measures, the most significant elements include sales, profit and profitability ratios. Norton (2002) states that the measures of profitability seem to be appealing as these standards provide a concrete criterion for the survival and growth of the organization.

1.1.1 Pre-tax ROA

Profitability is measured by two major financial ratios. The most significant reflector of profitability is return on assets (ROA). It reflects the percentage earned on each unit of money invested in assets. Many researchers have concluded that ROA is one of the best measures for profitability and progress of the firms (Rushdi & Tennant, 2003; Rappaport, 1986; Berger & Humphrey, 1997). According to Beaver (1966), the ROA is calculated by means of the following formula:

ROA= (Net Profit / Total Assets) * 100

1.1.2 Pre-tax ROE

A return on equity is another important measure of profitability, which reveals the rate of returns on the money invested in the equity. Rappaport (1986) considers this ratio as an effective tool to measure corporate financial performance. Ugur (2006) assumes the ratio a very important one to measure profitability. The return on equity can be calculated by using the following formula:

ROE= (Net Profit / Total Equity) * 100

1.2 Measuring working capital

Working capital is calculated by a combination of various ratios. Guthmann and Dougall (1948) demonstrate that the difference between current assets and current liabilities of an organization is known as the working capital. Park and Gladson (1963) gave the similar definition. According to Berk and DeMarzo (2014), the net working capital is, in its real sense, that part of the

capital, which is necessary in the short run in order to carry on the business. There are three major parts of current assets that include cash, accounts receivables, and inventory. Similarly, the most significant current liability is accounts payable. So, working capital management calls for liquidity management, receivable management, inventory management, and payable management.

12.1 The Current ratio

According to Podilchuk (2013), Current Ratio is the most significant ratio that is calculated in order to measure a firm's capability to pay short-term debt. The current ratio could be calculated from the following formula:

Current Ratio = (Current Assets / Current Liabilities)

1.2.2 The Quick ratio

Quick ratio reflects the availability of more liquid assets to meet short-term debts. The Quick ratio can be measured from the following formula:

Quick ratio = (Current Assets - Inventory) / Current Liabilities

1.3 The management of working capital and profitability

The ability of an organization to meet the short-term financial obligation is known as the liquidity. The question is that if the liquidity management has any impact on profitability? Several pieces of research have been conducted to find out this relationship. Lazaridis and Tryfonidis (2006), and Abdul and Mohamed (2007) argue that liquidity and profitability have a strong relationship. Wachowicz (2004) considers working capital management as an important influential factor in profitability. Dloof (2003) has confirmed the inverse association between liquidity and earnings before income tax in perspective of Belgian organizations.

1.3.1 The Cash conversion cycle (CCC)

Cash conversion cycle was found both negative and positive influence on the profitability of a firm. It was believed that the long span of CCC had the tendency to enhance profitability as long as it would stimulate sales (Deloof, 2003). Besides other studies, Chaklader and Shrivastava (2013), and Bhunia and Das (2015) are few of the researchers who have the opinion that CCC has an affirmative influence on the profitability of an organization. On the other hand, shorter CCC was also believed to have a positive impact on profitability. According to Baños-Caballero et al. (2013), the reason behind this is that, the shorter CCC would be able to reduce the dependence of the firm on external funds by generating internal funds.

The cash conversion cycle is an element that measures how many times a firm is required to finish the cycle for the acquisition of production, inventory, and sales of merchandise. Generally, the cash conversion cycle depicts the proficiency of working capital management of an organization (Singhania & Mehta, 2017; Bhatia & Srivastava, 2016; Altaf, 2016). Firms with short CCC are able to access quickly to the capital required for operation. According to Raheman and Nasr (2007), and Podilchuk (2013) have established that the current ratio and cash conversion cycle exert the negative influence on profitability, the cash conversion cycle could be calculated from the following formula:

Cash conversion cycle = DIO + DSO - DPO

where: DIO is days in inventory, DSO is outstanding, and DPO is denoted for the days payable outstanding

1.3.2 Account receivable turnover

As far as the management of accounts receivable turnover is concerned, the researcher found a significant effect on the profitability of firms (Bhatia & Srivastava, 2016; Ukaegbu, 2014). Several research studies have demonstrated that there is an inverse influence of accounts receivable turnover on the profitability (Bhatia & Srivastava, 2016, Sharma & Kumar, 2011). Accounts receivable turnover measures how quickly the firm is able to recover its credit from the buyers. A high ARTO generally reflects a good credit policy. According to Podilchuk (2013), it is calculated as:

ARTO = Net Revenues / Average Receivables

The account receivable turnover explains that how many numbers of times a firm is capable of converting its receivables from the customers. A high rate of turnover is generally considered a healthy sign for the company. According to Afza and Nazir (2007), there is an inverse association between profitability and account receivable turnover in listed companies of Karachi Stock Exchange.

1.3.3 The Inventory turnover

The inventory turnover is another variable in the management of working capital that has a cogent influence on the profitability and sales of an organization (Eroglu & Hofer, 2011; Ching et al., 2011). The recent studies proved that the implementation of Just-in-time (JIT) of inventory system enabled few firms to decrease the cost and enhance profitability (Filippini & Forza, 2016). The inventory turnover is a capacity of an organization to exchange its inventory into the liquid assets. It explains how efficiently and quickly a firm is able to sell out its inventory. The high inventory turnover means effective inventory management. According to Koumanakos (2008), there is an inverse influence of inventory turnover on returns. Few other researchers such as Podilchuk (2013), Agus and Noor (2006), and Eneje et al. (2012) also examined the influence of inventory turnover on the profitability and concluded the similar results. The inventory turnover could be measured from the following formula:

Inventory turnover = Cost of goods sold Revenues / Average Inventory

1.3.4 The Account payable

Accounts payable management is another important element in working capital management for the said study. A long period of accounts payable is supposed to raise profitability as it reduces exchange cost and transactional cost by means of delayed payment (Mathuva, 2010). However, there were also some empirical pieces of evidence found against the above phenomenon (Tauringana & Afrifa, 2013; Pais & Gama, 2015). According to Podilchuk (2013), average accounts payable shows the number of days an organization takes to pay back its account payables. The account payable could be calculated from the following formula:

AVAP = Cost of goods sold / Average Account payable

Raheman and Nasr (2007) have conducted a study on 94 listed companies of KSE100 and concluded the negative impact of working capital on profitability. They used the cash conversion cycle, current ratio, average collection period, current ratio, inventory turnover, and the average payment period as predictors, and size of a firm and debt ratio as control variables. They concluded that there is a negative association between working capital measures and profitability. Afza and Nazir (2008) have carried out another important research on 263 KSE100 listed non-financial companies and concluded a negative association between profitability and extent of aggressiveness of investment and financing policies.

1.4 Size of business and profitability

Besides the working capital management, there are some factors, which need to be included as control variables, and the size of the business is one of them. The rationale behind this is that the firms, which are large in size, have better access to financial markets. In addition to this, they are also supposed to have better opportunities to manage their working capital as compared to larger firms (Podilchuk 2013). A vast literature is available that explains the impact of size of business on profitability. For example, Lee (2009), Burson and Amato (2007), Ammar et al. (2003), and Amato and Wilder (1985) established this relationship.

2. DATA AND METHODOLOGY

The research is primarily causal and empirical in nature. After a detailed literature review, six independent variables have been selected in order to examine their impact on the performance of the heavy vehicle industry in Pakistan. These independent variables include quick ratio, inventory turnover, average accounts payable, cash conversion cycle, accounts receivable turnover, and size of the firm. On the other hand, the performance of heavy vehicles manufacturers is considered as a dependent variable that is depicted through the return on equity and return on assets. The combined effect of predictors is observed on each of the dependent variables by using 48 quarters of fifteen years data from March 2005 to March 2017. The strategy of research consists of multiple steps, which include sampling, establishing a hypothesis, collecting data, analyzing data and deriving conclusions. The data includes five firms of heavy vehicle industry listed in Pakistan/Karachi Stock Exchange. These firms are Hinopak Motors, Ghandhara Industries, Ghandhara Nissan, Al-Ghazi Tractor and Millat Tractor. All of the firms have been included in the sample.

2.1 Hypotheses formulations

The following hypotheses two hypotheses have been established as per previous discussions and literature, and keeping in mind of the objective of the undertaken research study:

− H1: Quick ratio, cash conversion cycle, receivable turnover, inventory turnover, average accounts payable, and size of the firm have a significant influence on returns on the asset in case of the heavy vehicle industry of Pakistan
− H2: Quick ratio, cash conversion cycle, receivable turnover, inventory turnover, average accounts payable, and size of the firm have a significant influence on returns on equity in case of the heavy vehicle industry of Pakistan.

2.2 Procedure for data collection

There are two sets of data; one is for independent variables and other for dependent variables. The data of five firms for 48 quarters of fifteen years from March 2005 to March 2017 has been retrieved from the Thomson Reuters. Thus, in this way we have a total of 233 observations, which we have considered from the Thomson Reuters.

2.3 Plan for data analysis

Panel least squares regression (PLSR) analysis is conducted by using Eviews 8. The analysis is carried out by taking into consideration, the assumptions of the regression analysis. The first step is to organize the data. Then each variable is verified if it is stationary or non-stationary by means of Levin, Lin, and Chu (2002) test. Non-stationary variables were converted into stationary by means of 1st difference or second difference as the case may require.

3. DATA ANALYSIS AND FINDINGS

The fifteen years data of independent and dependent variables have been retrieved. The analysis of each firm is conducted as mentioned below:

3.1 Descriptive statistics

The descriptive analysis exhibited that the pre-tax return on asset is 7.72%, however, the pre-tax return on equity is 11.48%. The result of Table 1 also exhibited that the value of kurtosis is greater than 3, which showed the non-normality of the data, it is further validated by the Jaque- Bera test results, which showed that the time series data of all the indicators are not normally distributed, thus we have to check the unit root in considered time series.

Table 1: Descriptive Analysis

Statistics	Pretax_ROA	Pretax_ROE	Quick Ratio	Current Ratio	Cash Cycle	AR_TO	INV_TO	AVE_AP	LN_TA
Mean	0.077176	0.114777	3.588283	4.618627	38.83047	2.383262	1.803433	98.75064	8.555975
Median	0.072000	0.113000	2.930000	3.780000	27.20000	2.100000	1.800000	79.90000	8.678970
Max.	0.224000	0.344000	7.440000	10.71000	568.1000	4.700000	5.000000	249.0000	9.787460
Min.	0.016000	0.019000	1.370000	1.530000	-174.0000	0.300000	0.200000	29.50000	6.661600
St.Dev.	0.037510	0.056875	1.884305	2.615318	133.9859	1.225211	0.976573	62.13438	0.563188
Skewness	1.696643	1.339190	0.700957	0.786191	1.217974	0.207816	0.603131	1.040060	-0.629606
Kurtosis	7.530290	7.180712	2.110626	2.488412	6.398362	1.921152	3.674474	2.844530	3.219211
Jaque-Bera	311.0348	239.3305	26.75955	26.54362	169.7280	12.97677	18.54276	42.24166	15.86020
Probability	0.000000	0.000000	0.000002	0.000002	0.000000	0.001521	0.000094	0.000000	0.000360
Sum	17.98200	26.74300	836.0700	1076.140	9047.500	555.3000	420.2000	23008.90	1993.542
Sum_St.Dev	0.326418	0.750462	823.7401	1586.854	4164915.	348.2647	221.2573	895678.0	73.58586
Observations	233	233	233	233	233	233	233	233	233

Source: Author's Calculation

Where:
Pretax ROA= Pre-tax return on assets
Pretax ROE= Pre-tax return on equity
AR_TO = Accounts receivable turnover
Inventory TO = Inventory turnover
Ave_Ap = Average accounts payable
Ln_TA = Natural log of total assets

3.2 Unit root test

Then each variable is verified if it is stationary or non-stationary by means of Levin, Lin & Chu test. The results of Table 2 exhibited that pre-tax ROE, pre-tax ROA, current ratio, cash conversion cycle, and inventory turnover are integrated of order I(0) or at level. However, quick ratio, account receive turnover, average account payables and natural log of the total asset have the first difference or integrated of order I(1).

Table 2. Unit root test – Levin, Lin and Chu Panel data

	Unit root test statistics (Levin, Lin & Chu test)			
	At Level		At Ist Difference	
Variables	Value	P-value	Value	P-value
Pre-tax ROE	-4.16953	0.0000	-	-
Pre-tax ROA	-9.81843	0.0000	-	-
Quick ratio	-0.72291	-0.2291	-12.9883	0.0000
Current ratio	-2.02009	0.0217	-	-
Cash conversion cycle	-2.72066	0.0033	-	-
Average Rec. turnover	-1.53009	0.0630	12.6842	0.0000
Inventory turnover	-3.25707	0.0006	-	-
Average A/c payable	0.56997	0.7156	-8.70235	0.0000
Ln of total assets	-1.29465	0.0977	-1.70223	0.0444

Source: Author's Calculation

3.3 Regression analysis for return on assets

Table 3 exhibits that the p-value of all the variables is significant except cash conversion cycle and size of business i.e. ln_TA. The R-square value is 45.5% that concludes the change of 45.5% variation of return on assets is because of considered predictors. The F-value is around 30, which shows that at least one of the variables is a strong predictor of ROA. Hence we conclude that quick ratio, accounts receivable turnover, inventory turnover, and average accounts payable have a significant impact on pre-tax return on asset. However, the size of the business and cash conversion cycle exhibit insignificant effect on pre-tax ROA. The following multiple regression model is considered for pre-tax ROA:

$$Pretax\_ROA = \beta_0 + \beta_1 \Delta QR + \beta_2 CCC + \beta_3 \Delta AR\_TO + \beta_4 INV\_TO + \beta_5 \Delta Ave\_AP + \beta_6 \Delta Ln\_TA$$

where: Pretax_ROA= Pre-tax return on asset, β_0 = Constant, β_1...... β_6 = Coefficient, ΔQR= 1st difference of quick ratio, ΔAR_TO = 1st Difference of accounts receivable turnover, INV_TO = Inventory turnover, Δ Ave_AP = 1st difference of average accounts payable, Δ Ln_TA = 1st difference of natural log of total assets i.e. size of business

Table 3: Panel Least Squares-Pretax ROA

Total panel (unbalanced) observations: 228

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.045808	0.005014	9.135269	0.0000
D(QUICK_RATIO)	0.003177	0.001121	2.833805	0.0050
CASH_CYCLE__DAYS_	2.52E-05	1.64E-05	1.541632	0.1246
D(A_R_TURNOVER)	-0.006997	0.002233	-3.133785	0.0020
INV_TURNOVER	0.015757	0.002435	6.471029	0.0000
D(AVREAGE_AP)	-0.000367	4.50E-05	-8.151999	0.0000
D(LN_TA)	-0.011293	0.011178	-1.010312	0.3135
R-squared	0.455072	Mean dependent var		0.073956
Adjusted R-squared	0.440278	S.D. dependent var		0.030866
S.E. of regression	0.023092	Akaike info criterion		-4.668406
Sum squared resid	0.117850	Schwarz criterion		-4.563119
Log likelihood	539.1983	Hannan-Quinn criter.		-4.625926
F-statistic	30.75972	Durbin-Watson stat		1.100885
Prob(F-statistic)	0.000000			

Source: Author's Calculation

The Table 3 depicts the following variables:

D(QUICK_RATIO) = 1st difference of quick ratio
CASH_CYCLE__DAYS_= Cash conversion cycle
D(A_R_TURNOVER)= 1st difference of accounts receivable turnover
INV_TURNOVER = Inventory turnover
D(Ave_AP)= 1st difference of average accounts payable
D(Ln_TA)= 1st difference of natural log of total assets

3.4 Regression analysis for return on equity

From the results of Table 4, it is concluded that all the considered predictors are cogent at 5% significance level except accounts receivable turnover and size of business. The R2 is 64.54% that reflect that the model causes substantial variations in pre-tax return on equity with significant F-value. Thus, we conclude that average accounts payable, quick ratio, inventory turnover, and cash conversion cycle are significantly influential on pre-tax return on assets. However, the average account receivable turnover and size of business do not have any significant influence on the dependent variable. The following multiple regression model is considered for pre-tax ROE:

$$\text{Pre-tax\_ROE} = \beta_0 + \beta_1 \Delta QR + \beta_2 CCC + \beta_3 \Delta AR\_TO + \beta_4\ INV\_TO + \beta_5\ \Delta\ Ave\_AP + \beta_6 \Delta\ Ln\_TA$$

where: Pretax_ROE = Pretax return on equity, β_0 = constant, β_1...... β_6 = coefficient, ΔQR = 1st difference of quick ratio, ΔAR_TO = 1st difference of accounts receivable turnover, INV_TO = inventory turnover, $\Delta\ Ave\_AP$ = 1st difference of average accounts payable, $\Delta\ Ln\_TA$ = 1st difference of natural log of total assets i.e. size of business

Table 4: Panel Least Squares-Pretax ROE

Total panel (unbalanced) observations: 228				
Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	0.083030	0.006038	13.75158	0.0000
D(QUICK_RATIO)	0.005066	0.001350	3.752880	0.0002
CASH_CYCLE__DAYS_	-0.000145	1.97E-05	-7.372038	0.0000
D(A_R_TURNOVER)	-0.004986	0.002689	-1.854395	0.0650
INV_TURNOVER	0.018322	0.002932	6.248806	0.0000
D(AVREAGE_AP)	-0.000245	5.42E-05	-4.522840	0.0000
D(LN_TA)	-0.025418	0.013460	-1.888431	0.0603
R-squared	0.645495	Mean dependent var		0.109750
Adjusted R-squared	0.635870	S.D. dependent var		0.046079
S.E. of regression	0.027806	Akaike info criterion		-4.296940
Sum squared resid	0.170866	Schwarz criterion		-4.191653
Log likelihood	496.8511	Hannan-Quinn criter.		-4.254460
F-statistic	67.06732	Durbin-Watson stat		1.069923
Prob(F-statistic)	0.000000			

Source: Author's Calculation

4. CONCLUSIONS AND RECOMMENDATIONS

The results pertaining to the first hypothesis, we have concluded that quick ratio has an affirmative and significant impact on return on assets. This demonstrated that a greater availability of quick assets i.e. (cash and marketable securities) affects the profitability of the heavy vehicle industry positively but the impact is meager. Accounts receivable turnover has a negative effect on ROA, it means that the quick recovery of accounts affects ROA negatively. Inventory turnover has a positive impact on ROA. It means that a quick conversion of inventory into liquid assets lead toward booking higher ROA. Average accounts payable has a negative effect on ROA that reflects that payment of an account payable quickly may deprive the firm of better ROA. Quick ration has a positive influence on return on equity as well, it means that greater availability of quick assets for instance marketable securities and cash will affect the profitability of the heavy vehicle industry positively. The cash conversion cycle (CCC) has established a negative influence on return on equity (ROE), since, cash conversion cycle has a negative influence on ROE and this is in accordance with the literature review. Inventory turnover has a positive impact on ROE. It means that a quick conversion of inventory into liquid assets lead toward booking higher ROA. Average accounts payable has a negative effect on ROE that reflects that payment of an account payable quickly may deprive the firm of better ROE. In the context of the heavy vehicle industry in Pakistan, this is very important for the firms to build strategies for the management of working capital to enhance profitability. The firms first need to identify the influencing factors in working capital. The next stage is to know about the positive or negative effect on the profitability of firms. The influential factors on return on assets of heavy vehicle industry of Pakistan are the quick ratio, inventory turnover, accounts receivable turnover, and average accounts payable. However, on the other hand, the influence of the cash conversion cycle and the size of the business were found not be significant. Therefore, the firms need to focus on liquidity, a collection of receivables, quick payment of payables and better inventory management to build up a good ROA. As far as return on equity is concerned, it is influenced by liquidity, cash conversion cycle, inventory turnover and average accounts payable. Consequently, these are the elements that need to be addressed by the industry to check the ROE. Hence, we concluded that the management of working capital has a cogent influence on the profitability of the heavy vehicle industry of Pakistan.

The research includes six variables in working capital i.e. quick ratio, inventory turnover, average accounts payable, cash conversion cycle, receivable turnover, and size of an organization. A further research may be conducted to include a few more aspects of working capital. The research is limited to Heavy Vehicle industry of Pakistan, which could be replicated on some other sectors. The research has as time frame from 2005 to 2017, which could be increased. Further, the dependent variables may be increased or replaced in other studies.

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