

Effect of Receivables Management on Profitability: A Study of Commercial Vehicle Industry in India

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Abstract

Sound working capital management is crucial to the survival of an organization. It is also imperative for the growth of an organization. The management of receivables is a significant component of a firm's working capital management. Present study empirically examines the effect of efficiency of receivables management, measured by debtor's turnover ratio, in the commercial vehicle industry in India on the firm's profitability. Profitability was measured using Return on Capital Employed. The research was conducted for the period 2009 to 2016. The findings indicate a significant positive relationship between debtor's turnover ratio and profitability of the firm. This implies that receivables management should be a key focus point for improving profitability in this industry.

Keywords: Working Capital, Receivables management, profitability, debtors' turnover ratio, return on capital employed, working capital management

1. Introduction

The liquidity decision or working capital decision is one of the major financial management decisions in an organisation. Working capital is the operating capital that is available to a firm for the performance of its daily operations and for accomplishing its financial goals. Guthmann and Dougall [1] defined working capital as excess of current assets over current liabilities. Park and Gladson [2] defined working capital similarly. Berk and Demarzo [3] define net working capital as the "the capital required in the short term to run the business". An organization's level of working capital measures its short term financial position. Working capital management is necessary to aid in financial stability and efficiency of the firm in the dynamic external environment by ensuring the adequacy of current assets with respect to current liabilities. The nature and size of the business will decide the level of working capital in a firm. Sound working capital management is crucial to the survival and growth of an organization. Efficient

management of working capital helps in enhancing the profitability of firm operating within the constraints of its industry and market.

Receivables management is a significant component of any organization's working capital management. Credit sales are a norm in most industries and imperative for survival in the industry. Van Horne and Dhamija [4] are of the view that credit sales are a tool for both customer acquisition and retention. According to Bhattacharya [5] the decision to grant trade credit may be a part of marketing strategy or finance strategy. An organization may be compelled to provide credit to a large number of its customers but this means that the short-term funds are tied-up for the period for which the credit is provided to these customers. It is important that a firm manages its debtors in such a way that the debtors' collection period is reduced resulting in an increase in debtors' turnover. This may have a favourable impact on the firm's profitability.

The present study empirically examines the effect of receivables management, as measured by debtors' turnover ratio, in the commercial vehicle industry in India on the firm's profitability, through Return on Capital Employed.

2. Literature Review

A number of researches have been conducted in different countries to determine the impact of working capital or its components on a firm's profitability. Lazaridis and Tryfonidis [6] researched on how working capital management was related to the profitability of a sample of 131 companies listed in the Athens Stock Exchange (ASE). The period of the study was 2001-2004. Their findings showed that a significant relationship exists between the gross operating profit and the cash conversion cycle. They concluded that a company can increase its profitability by keeping each component of working capital at an optimum level.

Raheman and Nasr [7] researched how management of working capital affects profitability of Pakistani firms that were listed on Karachi Stock Exchange. The period considered in the study was 1999-2004 and the working capital management variables taken into consideration included cash conversion cycle, debtors' collection period, inventory turnover, creditor's payment period and current ratio. Their research findings showed that cash conversion cycle and the firms' profitability have a significant negative relationship. This indicates that profitability will decrease when the cash conversion cycle increases, so to create value for the shareholders, the firm should attempt to decrease this cycle. They also observed that both liquidity and the use of debt are significantly, negatively related to profitability. The size of the firm, however, was found to be positively related to the firm's profitability.

Gill, Biger and Mathur [8] studied the relationship between the gross operating profit of American listed firms and the management of their working capital from 2005 to 2007. The study was based on sample of eighty-eight firms listed on NYSE. They found that the cash conversion cycle and gross operating profit had a significant relationship. Accordingly, managers can increase the profits of their companies by optimally managing the cash conversion cycle and keeping accounts receivable at optimum level.

Mohamad and Saad [9] explored how the market valuation and profitability of Malaysian listed companies was affected by the management of their working capital. They found significant effect of working capital on the performance of the companies. They highlighted that market valuation

and profitability of a firm can be enhanced by efficient management of its working capital requirements.

Mathuva [10] examined the influence of management of working capital components on profitability of 30 Kenyan Listed Firms listed on Nairobi Stock Exchange. The findings showed a significant negative relationship between the firm's profitability and its accounts collection period. Further, it was found that profitability increases significantly by decreasing the inventory conversion period as well as the creditors' payment period.

Abdulraheem, Yahaya, Isiaka and Aliu [11], researched how inventory management impacted the profitability of small businesses in Kwara State Nigeria. They found that effective inventory management can result in significantly higher profitability of these small businesses.

Karadagli [12] also studied the effect of working capital management on the profitability of companies. Karadagli [12] researched the effect of cash conversion cycle and net trade cycle, on the operating income as well as the stock market return of these companies. The study was conducted for the period of 2002-2010 based on sample of Turkish listed companies. Karadagli compared the effect of management of working capital on profitability for SMEs and for larger companies. The findings indicated for SMEs that both operating income and returns on stocks increased in case of an increase in both the net trade cycle and the cash conversion cycle. However, in case of bigger companies the effect was reported as opposite to that of SMEs.

Agha [13] researched how the profitability of Glaxo Smith Kline pharmaceutical company for the period 1996-2011 was impacted by management of its working capital. She found that the firm's profitability increases by decreasing the inventory turnover ratio, accounts receivable ratio and creditors' turnover ratio. However, no effect of current ratio was found on the profitability of the firm.

Ramana, Ramakrishnaiah and Chengalrayulu [14] studied the impact of managing receivables on the working capital and profitability of cement companies in India. Ramana et al. found that selected companies from cement industry were efficient in managing their receivables and this was reflected in lower collection period. The efficient receivables management was found to have a positive impact on both working capital and profitability.

Rehman, Khan and Khokhar [15] researched the determinants of profitability of petrochemical companies in Saudi Arabia. They examined the relationship of net profit margin with creditors' Velocity, long-term debt to equity ratio, debtors' turnover ratio, inventory turnover ratio and total assets turnover ratio. The study found that creditors velocity, long-term debt to equity ratio, inventory turnover ratio and total assets turnover ratio have a significant relationship with profitability measured using net profit margin. However, debtors' turnover ratio did not show any significant relationship with net profit margin.

Santosuosso [16] explored the association between efficiency ratios and the profitability, stock market value and operational cash flow of 215 non-financial firms listed on Italian Stock Exchange. It was found that there is highly significant association between measures of profitability related to operating activities, such as EBITDA to asset ratio, and proxies of efficiency, such as total asset turnover ratio, inventory turnover ratio and accounts receivable turnover ratio. However these efficiency ratios showed a weak association with profitability measures such as ROA and ROE. A strong association was found between measures of cashflow

and efficiency ratios such as total asset turnover and account receivables turnover. However the efficiency measures did not have significant association with stock market value.

Ikechukwu and Nwakaego [17] found significant positive impact of accounts receivable on profitability, measured by return on total assets, of Nigerian firms manufacturing building materials, chemicals and paints. They did not find any significant impact of debt ratio or sales growth on the profitability of these firms. Eneke [18] studied how financial ratios such as total asset turnover ratio, debtors' turnover ratio, debt equity ratio, creditors' turnover ratio and interest coverage ratio affected the profitability (return on total assets) of oil and gas companies in Nigeria. Interest coverage ratio, total assets turnover ratio and debtors' turnover ratio were found to have a significant positive relationship with profitability of these companies. Similarly, Ezejirofor et al. [19] found that credit policy, that is the debtors' collection period, affected the profitability of manufacturing companies in Nigeria.

Mbula, Memba and Njeru [20] analysed the effect that accounts receivables had on the financial performance of Kenyan firms with venture capital funding from the government. They observed a positive effect of accounts receivables on the financial performance of these firms. They concluded that managers of these firms should improve efficiency of management of accounts receivable.

3. Research Methodology

This study empirically examines the effect of receivables management on the profitability of firms in the Commercial Vehicle industry in India for the period 2009 to 2016. The study is based on a sample of six companies, namely: Ashok Leyland, Eicher Motors, Force Motors, SML ISUZU, TATA Motors and VE Commercials. The data on the different variables considered in the study has been obtained from the capitaline database.

In the present study profitability, which is measured by the Return on Capital Employed (ROCE), is the dependant variable and the efficiency of receivables management, as measured by the debtors' turnover ratio, is the independent variable. Firm growth, financial leverage, firm size, short-term liquidity, percentage of investment in fixed asset and efficiency of fixed assets utilization are used as control variables.

The variables are explained below:

- **Return on Capital Employed (ROCE):** This is the dependant variable. ROCE is a measure of the firm's profitability.

$$\text{ROCE} = \frac{\text{Profit before Interest and Tax}}{\text{Capital Employed}} \times 100$$

- **Debtors Turnover Ratio (DTR):** This ratio measures how efficiently receivables have been managed.

$$\text{Debtors Turnover Ratio} = \frac{\text{Sales}}{\text{Sundry Debtors}}$$

- **Current Ratio (CR):** The short-term liquidity of a firm is determined by this ratio.

$$\text{Current Ratio (CR)} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

- **Fixed Assets Turnover Ratio (FATR):** The fixed assets turnover ratio (FATR), which is the ratio of sales to fixed assets, is used as measure of efficiency of fixed assets.

$$FATR = \frac{\text{Sales}}{\text{Gross Fixed Assets excluding capital work in progress - revaluation reserve}}$$

- **Firm Growth (FG):** Firm growth (FG) is measured as percentage change in Sales in comparison to previous year.

$$\text{Firm Growth} = \frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}}$$

- **Firm Size (LNS):** The natural logarithm of sales is used to measure firm size (LNS).
- **Financial Leverage (FL):** The debt-equity ratio is used as a measure of financial leverage
- **Fixed Asset Percentage (FAP):** This measures the percentage of investment in Fixed Assets (FAP) and it is the ratio of fixed assets to total assets.

The model for the study is as follows:

$$ROCE = \beta_0 + \beta_1 DTR + \beta_2 CR + \beta_3 FATR + \beta_4 FG + \beta_5 LNS + \beta_6 FL + \beta_7 FAP + \varepsilon$$

Regression analysis has been done with the help of SPSS software. The multicollinearity among the independent variables has been determined on the basis of Variance Inflation Factor (VIF). Autocorrelation has been tested using the Durbin-Watson test. The White test has been used to test heteroscedasticity of the data. The Augmented Dickey-Fuller test has been conducted to determine whether the data has unit root or not and, therefore, to find out if the data is stationary.

4. Findings and Analysis

The descriptive statistics of the six companies for the period 2009 – 2016 is provided in Table 1. It can be seen that the six companies have a mean current ratio of 1.175 for the period of study. The mean firm growth for the industry is 15 percent. On average 64% of the total assets are fixed assets. The industry has provided a mean ROCE of 12.76 percent.

Table 1. Descriptive statistics

Variables	Mean	Standard Deviation
Current Ratio	1.175	0.178
Financial Leverage (Debt-equity ratio)	1.005	0.248
Fixed asset Turnover ratio	2.174	0.365
Fixed asset Percentage	0.642	0.046
Firm Growth	0.150	0.283
Debtor turnover ratio	11.001	2.600
LNS	8.304	1.421
ROCE	12.765	8.176

The matrix of correlation among the different variables used in the study is provided in Table 2. It is observed that Fixed Asset turnover ratio (FATR), Financial Growth (FG) and debtors' turnover ratio (DTR) are all significantly positively correlated with return on capital employed (ROCE) at one percent significance level ($p > 0.01$). Current Ratio (CR), Fixed Asset Percentage (FAP) and Firm size (LNS) are negatively correlated with ROCE but the correlation is not significant at 5 percent significance level. Financial Leverage (FL) is negatively correlated with ROCE which is statistically significant at one percent significance level.

Table 2. Correlation analysis

Variables		CR	FL	FATR	FAP	FG	DTR	LNS	ROCE
CR	Pearson Correlation	1							
	Sig.								
FL	Pearson Correlation	-0.118	1						
	Sig.	0.434							
FATR	Pearson Correlation	0.266	-0.359*	1					
	Sig.	0.074	0.014						
FAP	Pearson Correlation	-0.091	0.230	-0.501**	1				
	Sig.	0.545	0.124	0.000					
FG	Pearson Correlation	-0.016	-0.317*	0.364*	-0.050	1			
	Sig.	0.916	0.032	0.013	0.740				
DTR	Pearson Correlation	-0.518**	-0.422**	0.400**	-0.343*	0.413**	1		
	Sig.	0.000	0.004	0.006	0.020	0.004			
LNS	Pearson Correlation	-0.413**	0.370*	-0.428**	0.333*	-0.073	-0.271	1	
	Sig.	0.004	0.011	0.003	0.024	0.631	0.069		
ROCE	Pearson Correlation	-0.225	-0.469**	0.626**	-0.116	0.571**	0.730**	-0.128	1
	Sig.	0.133	0.001	0.000	0.441	0.000	0.000	0.396	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The results of regression analysis for the model of the study are summarized in Table 3. The value of adjusted R^2 is 0.837 which indicates that 83.7 percent of the variability in ROCE (the dependant variable) is explained by the model. The model is significant as $F = 27.856$ which is significant at one percent level of significance.

Table 3. Model summary^b

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	F	Sig.
1	0.915 ^a	0.837	0.807	7.47974	27.856	0.000 ^a

a. Predictors: (Constant), Fixed asset Percentage, FG, CR, FL, LNS, FATR, DTR

b. Dependent Variable: ROCE

There is insignificant positive auto-correlation as Durbin Watson test result is 1.399. The residual diagnostic tests show that there is no heteroscedasticity. The White Test statistic (observed R-squared) is 45.85 which is not significant at 5 percent ($p = 0.1037$), thus accepting the null hypothesis of no heteroscedasticity. The data does not have unit root (Augmented Dicky-Fuller test statistic = -4.739 which is significant at one percent significance level as $p = 0.0004$), and is therefore stationary. It can further be observed from Table 4 that there is no multicollinearity among the independent variables as the variables all have VIF (Variance Inflation Factor) of less than 5.

Table 4. Multiple regression statistics

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-50.189	14.497		-3.462	0.001		
DTR	0.161	0.036	0.654	4.488	0	0.202	4.948
FG	4.505	3.56	0.102	1.265	0.213	0.656	1.525
FL	-4.291	2.634	-0.131	-1.629	0.112	0.661	1.512
FATR	4.887	0.877	0.533	5.574	0	0.47	2.129
CR	2.568	3.513	0.097	0.731	0.469	0.244	4.095
LNS	3.146	1.154	0.263	2.726	0.01	0.462	2.163
FAP	34.967	8.447	0.332	4.14	0	0.669	1.495

Note: a. Dependent Variable: ROCE Percentage

It can be observed from Table 4 that DTR has a statistically significant positive relationship with ROCE. This implies that ROCE will increase with an increase in the debtors' turnover ratio in the commercial vehicle industry. These findings are consistent with the earlier findings which advocate a focus on better management of each component of working capital [8, 13]. Clearly, the profitability of the firms in the industry will improve with an increase in the efficiency of receivables management.

Financial Leverage is observed to have a negative relationship with ROCE, however it is not significant at $\alpha = 0.05$. Firm growth and Current ratio have positive regression coefficients. However, these are not found to be significant at 5 percent significance level. Fixed Asset Turnover Ratio has a significant positive relationship with ROCE. This implies that an increase in FATR by one will increase ROCE by 4.887 percent. Similarly, the size of the firm (LNS) also a positive impact on ROCE that is statistically significant at one percent significance level. This means that an increase in sales will lead to increase in the profitability of the firms. As the commercial vehicle industry is capital intensive, it would be expected that an increase in investment in fixed assets, that is, increase in fixed assets as a percentage of total assets, will

improve profitability of the firms. This is supported by the findings of the study as the fixed asset Percentage has a positive beta which is significant at one percent significance level.

5. Conclusion

The present study shows a significant positive impact of debtors' turnover ratio on the profitability of firms in the commercial vehicle industry in India. An increase in the debtors' turnover will increase the profitability of the firm. Thus the efficient management of accounts receivables increases profitability. These findings are consistent with those of Ramana, Ramakrishnaiah and Chengalrayulu [14] and Ikechukwu and Nwakaego [17]. The firm growth and the liquidity of the firms do not significantly affect the profitability. On the other hand, improvement in the efficiency of use of fixed assets, as reflected by the fixed asset turnover ratio, increases profitability of the firms. At the same time increasing percentage of fixed assets also helps the firms create profits. The firms in commercial vehicle industry should focus on managing their receivables efficiently through better credit policy and collection efforts.

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