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OBJECTIVES
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RESULTS & DISCUSSION
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- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–23

UNPUBLISHED DISSERTATIONS

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITES

- Garg, Bhavet (2011): Towards a New Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY OF SELECT TWO AND THREE WHEELER COMPANIES IN INDIA – MULTIPLE REGRESSION ANALYSIS

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ABSTRACT

The question of determination of profit is of great importance because profit is a very important aspect of business. The task of management is the maximization of profits and the efficiency of business is measured by the amount of profit earned. A business is considered to be more efficient only if it earns more profit. The profit of a business may be measured by studying the profitability of investments in it. Profitability is the ability of a given investment to earn a return from its use. This ability is referred to as learning power or operating performance of the concerned investment. Profitability is a relative term and its measurement can be achieved by profit and its relation with the other objects by which the profit is affected. The profitability is the most powerful motivational factor in any business. It is the test of efficiency and the measure of control.

KEYWORDS
working capital management, profitability analysis, two and three wheeler companies in India.

INTRODUCTION

In the conventional production function approach for determination of relationship between output and profit, fixed capital is taken into account as explanatory variable amongst others; the role of working capital is ignored[1]. If a company desires to take a greater risk for bigger profits and losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. However, this policy is likely to result in a reduction of the sale volume, therefore of profitability. Hence, a company should choose between liquidity and profitability and decide about its working capital requirements[2]. It is therefore felt that there is the need to study the important role of working capital in profit generating process.

The two important aims of working capital management are short-term solvency and profitability. To ensure solvency, the enterprises should be very liquid. If the enterprises maintain a relative large invest of long-term funds in currents assets, they will not face the risk of cash shortage or stocks-outs. However, there is a cost associated with maintaining a sound liquidity position. A considerable amount of the firm's funds will be tied up in current assets and to the extent, the investment is idle, the firm's profitability will suffer[3]. To have higher profitability, the firms may sacrifice solvency and maintain a relatively low level of current assets. When the firms do so, their profitability will improve as fewer funds are tied up in idle current assets, but their solvency will be threatened[4]. Sakar and Saha have aptly observed that management of working capital has an important bearing on the profitability of an enterprise[5]. Generally, the higher the working capital, the less the rate of return on capital employed while a lower value of working capital yields a higher rate of return[6].

SIGNIFICANCE OF THE STUDY

As such, the study is expected to help the corporate management, the financiers, the investors and the government at large, to take valuable decisions at their own. The study has academic relevance too in so far as new theoretical and practical knowledge would be added to the existing stock of knowledge undoubtedly. The present study will act as a masterpiece on the subject for further research and development. There is no study on working capital management of Two and Three Wheeler Sector after liberalization. Therefore, to cover the gaps in the earlier studies, the present study is undertaken to give an insight into the working capital management of selected Two and Three Wheeler Companies in India. It would also enable shareholders, investors and investment analyst to identify the determinants of corporate performance. Further, it would provide insight to banks, financial institutions and long - term lenders to understand the financial capability and effectiveness of the companies. Moreover, it would open up new vistas to the industry association and the government in understanding the characteristics of the companies for their and intra - firm comparison. It might also help the academic researchers in securities, industry and company by providing different perspective of the analysis.

OBJECTIVES OF THE STUDY

The present study is designed to examine management of working capital in the selected two and three wheeler companies in India. Following are the specific objectives of the study:

1. To assess and comment on the liquidity position of selected units.
2. To assess the impact of working capital ratios on profitability; and
3. To make suggestions for the better working capital management of selected study units.

HYPOTHESIS

H_0: There is no association with profitability and working capital ratios of selected Two and Three Wheeler companies in India.

RESEARCH DESIGN

It is not possible in practice for an individual research worker to approach all the bits and pieces in the universe. Researchers select only a small amount of bits pieces from the universe for the purpose of the study on the basis of stratified sampling. The sample so selected constitutes the sample design for the purpose. A research design is a definite plan for obtaining a sample from a given population. Research design means a sketch or a drawing of a research project's structure. It comprises a series of prior pronouncements that, taken together, provide a roadmap for carrying out a research project. The research design of the present study is outlined hereunder.

SELECTION OF SAMPLE

Keeping in view the scope of the study, it is decided to include all the companies under automobile industry working before or from the year 2005-06 to 2014-15. But, owing to several constraints such as non-availability of financial statements or non-working of a company in a particular year etc., the researcher is compelled to restrict the number of sample companies to nine. Therefore, this study is expost facto based on survey method making a survey of twelve companies in two and three wheeler sector in India.

PERIOD OF STUDY

The period 2005-06 to 2014-15 is selected for this study of Indian automobile industry. This 10 years period is chosen in order to have a fairly long, cyclically well balanced period, for which reasonably homogenous, reliable and upto-date financial data would be available. Further, the span chosen for the study is the period of the beginning of liberalization measures introduced by the Government of India. Hence, the period 2005-06 to 2014-15 is an era of growth of working capital management in the manufacturing sector, particularly automobile industry and has got genuine economic significance of its own.

SOURCE OF DATA

The data used for the present study is secondary data. The major source of data analyzed and interpreted in this study related to all those data which was collected from "PROWESS" database, which is the most reliable on the empowered corporate database of Centre for Monitoring Indian Economy(CMIE). The database provides financial statements, ratio analysis, fund flows, product profiles, returns and risk on the stock market. The Reserve bank of India Bulletin, Business news-papers, Annual survey of industry, CMIE publications, Libraries of various research institutions through internet etc. have also been used as a data source.

DATA EDITING

For this study, major part of data come from secondary sources. Data have been collected in raw form and then it is made suitable for analysis as per the methodology defined for the purpose.

DATA ANALYSIS

The financial and statistical analysis approach plays a vital role in the financial environment. To enjoy the benefit of financial and statistical analysis researcher has collected, assembled and correlated the data, classified the data appropriately and condensed them into a related data series; stated the resultant information in a comprehensive form, text, tables and analyzed and interpreted the reported data. The financial and statistical techniques applied in the study are given below.

In the course of analysis in this study, use of various accounting and statistical techniques have been made. Accounting technique includes ratio analysis, while among statistical techniques the arithmetic mean (X), co-efficient of variation (CV), test of significance ('t' test), trend indices, simple growth rates, correlation co-efficient (*r*), co-efficient of determination (R^2) and linear regression equations have been applied through EXCEL, SX and SPSS statistical software's. In addition, multiple regressions and multiple correlation analysis were also applied using financial ratio as variables.

REVIEW OF LITERATURE

Ahmadi Mosa et.al., (2012)[1], examine the relationship between working capital management and profitability in 33 companies of food industry group member at Tehran stock Exchange for the period from 2006 to 2011, and the effects of various variables of working capital management including average accounts collection cycle, inventory turnover, medium term debt payment and the cash conversion cycle on operational net profit of the companies. The findings of the research proved that managers can create a positive value for stock holders by decreasing collection cycle, debt payment period, inventory turnover, and cash conversion cycle to the lowest possible level.

Quayyaum Sayeda Tahmina (2012)[2]**,** tries to investigate if there is any relationship between working capital management and profitability in manufacturing corporations. For this study corporations enlisted with the Dhaka Stock Exchange were selected covering the period between 2005 and 2009. The purpose of the study is to examine whether there is statistically significant relationship between the profitability and working capital management and also help to explain the necessity of firms optimizing the level of working capital management efficiency and in that way management taking productive actions to maximize their profitability. It is proved that except for food industry all other selected industries have a significant level of relationship between profitability indices and various working capital components. This paper also shows that the significant level of relationship varies from industry to industry.

Banos-Caballero Sonia, et.al., (2012)[3]**,** present the relationship between working capital management and profitability for Spanish small and medium size enterprises (SMEs) by controlling for unobservable heterogeneity and possible endogeneity. For the purpose of this study, standard working capital ratios were used to measure the effectiveness of working capital in the selected firms. This paper offers new evidence on the relationship between working capital management and profitability by controlling for unobservable heterogeneity and possible endogeneity and, unlike previous studies, given the competing hypotheses of effect of an increase in working capital on firm‟s profitability, it analyses a possible quadratic relation between these variables. At the end it has been observed that most SMEs do not care about their working capital position, most have only little regard for their working capital position and most do not even have standard credit policy. Many do not care about their financial position, they only run business, and they mostly focus on cash receipt and what their bank account position.

Akino Olayinka Olufisayo (2012)[4]**,** carries out a detailed study of the determinants of working capital requirements – both internal and external of 66 firms in Nigeria. The study covers the period from 1997 to 2007. On the basis of the results it was found that sales growth, firm‟s operating cycle, economic activity, size and permanent working capital are the firms‟ specific characteristics that positively drive working capital policy. Leverage, however, is inversely related to working capital requirements. The results conclude that traditional valuation methods used to quantify the efficiency of corporate working capital policy may be suspect as increased investments in operating working capital may be necessitated by increase in business uncertainties.

Bei Zhao and Wijewardana (2012)[5]**,** examine the working capital policy (WCP) practices in Srilankan context. They utilize multiple regression analysis (MRA) to empirically formulate the industries best practices limit and measure firm efficiency as the detachment from that limit. The objective of the study was to pursue additional research rather than to reveal all the factors associated with WCP in the Srilankan context. The authors believe that the resource constraint may be a major barrier to utilization of working capital MCM by firms. Firms may invest resources into managing a particular area of working capital where they are performing badly because the returns from controlling the problem area are perceived to be high. If the direction of working capital management (WCM) is not understood, the investment of more resource into an area leads to worse performance.

Nakamura Palombini Nathalle Vicente (2012)[6]**,** focus on the key factors of working capital management by exploring the internal variables of a number of companies. 2976 Brazilian Public Companies data from 2001 to 2008 were used for the study. And it was found that debt level, size in growth rate could affect the working capital management of the companies. The study aimed at contributing to the understanding of the short term financial decisions by investigating the key factors of working capital management. At the end of the study, it was found that companies with a high level of working capital were consistent with previous studies (CHIOU, CHENG and WU, 2006; NAZIR and AFZA, 2008). These findings corroborate the Pecking Order Theory and suggest that as companies increase their financial leverage, they tend to assume a more restrictive policy in working capital management in order to prevent capital consumption in accounts receivable and inventory and to avoid issuing new bonds and shares.

Ding Sai et.al., (2012)[7], have used a panel of over 1,16,000 Chinese firms of different ownership types over the period 2000 to 2007 to analyze the linkages between investment in fixed and working capital and financing constraints. It was observed that those firms characterized by high working capital, display high sensitivities of investment in working capital to cash flow and low sensitivities of investment in fixed capital to cash flow**.** Further the authors constructed and analyzed firm level FKS and WKS measures and it was found that despite severe external financing constraints, those firms with low FKS and high WKS exhibited the highest fixed investment rates. It is thereby concluded that an active management of working capital may help firms to alleviate the effects of financing constraints on fixed investment.

Samson Adediran et.al., (2012)[8]**,** hope to empirically investigate the impact of working capital management on the profitability of a sample of 30 SME‟s of Nigeria during 2009. In conclusion, the writer points out that, managers can create value by reducing their firm‟s number of day's accounts receivable and inventories. At the same time, the firm‟s profitability could also be improved by reducing the cash conversion cycle.

Ching Novazzi and Gerab (2012)[9]**,** Conducted a study to find out the relationship between WCM and profitability in Brazilian listed companies. The objectives of their study were to investigate if there was any difference between corporate profitability and WCM in two separate group of companies: working capital intensive and fixed capital intensive and to identify the variables that most effect profitability. They have measured profitability in different ways: return on sales (ROS), return on asset (ROA), return on equity (ROE). The independent variables used are cash conversion efficiency, debt ratio, days of working capital, days receivables and days inventory. Multiple linear regression used in their study identified that there exist negative relationship between cash conversion cycle (equal to days of working capital), debt ratio and profitability.

Akoto Richar et.al., (2013)[10],closely study the relationship between working capital management policies and profitability of the thirteen listed manufacturing firms in Ghana. At the end of the study, a significantly negative relationship between profitability and accounts receivable days is found to exist. Profitability is significantly positively influenced by the firms cash conversion cycle (CCC), current assets ratio and current asset turnover. It is also suggested that managers can create value for the shareholders by creating incentives to reduce their accounts receivable to 30 days.

DATA ANALYSIS AND INTERPRETATION

INTER – RELATIONSHIPS BETWEEN THE VARIABLES

For the purposes of examining the relationship between working capital ratios and profitability ratio, Karl Pearson's correlation co-efficient can be applied. It implies the interdependence of the set of variables upon each other in such a way that changes in the other. In this section, in order to identify the working capital influence on profitability, a linear multiple regression models were used. In the analysis, working capital ratios, viz., CR, LR, WTR, ITR, RTR and CTR are taken as the independent variables and Profit before Tax (PBT) to total assets ratio is used as dependent variable.

The regression model used in this analysis is here under.

PBT/TA = $b_0 + b_1$ CR + b_2 LR + b_3 WTR+ b_4 ITR + b_5 RTR + b_6 CTR

Where

b_0, b_1, b_2, b_3, b_4, b_5 and b_6 are the parameters of the profitability to be estimated.

CR = Current Ratio
LR = Liquid Ratio
WTR = Working capital turnover ratio
ITR = Inventory turnover ratio
RTR = Receivables turnover ratio and
CTR = Cash turnover ratio

ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY

TOTAL INDUSTRY

In order to understand the influence of working capital ratios on profitability, a linear multiple regression model was used. In table 1, multiple correlation and multiple regression techniques have been applied and the impact of working capital ratios on profitability, the regression co-efficient have been found using 't' test. In this chapter, current ratio, liquid ratio, working capital turnover ratio, inventory turnover ratio, receivables turnover ratio and cash turnover ratio have been taken as the explanatory variables and profit before tax (PBT) to total assets ratio has been used as the dependant variable.

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Total industry are presented in table 1. For one unit increase in current ratio, profitability increased by 0.341 units which was statistically significant at 5 per cent level. When the liquid ratio increased by one unit, profitability decreased by 0.334 units which was statistically significant at 1 percent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.001 units which was also statistically insignificant. For a one unit increase in inventory turnover ratio, profitability increased by 0.016 units which was statistically significant at 5 per cent level. When the receivable turnover ratio increased by one unit, profitability increased by 0.001 unit which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.001 units which was not statistically significant. These six independent variables contribute to 89 percent of the variations in the profitability of the Indian two and three-wheeler companies.

ATUL AUTO LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Atul Auto Limited are presented in table 2. For one unit increase in current ratio, profitability increased by 1.070 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.001 units which was statistically significant at 5 per cent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.002 units which was also not statistically significant. For a one unit increase in inventory turnover ratio, profitability decreased by 0.013 units which was statistically significant at 1 percent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.007 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.024 units which was statistically significant at 1 percent level. These six independent variables contribute to 96 percent of the variations in the profitability of the Atul Auto Limited. Thus, the co-efficient of LR, ITR and CTR are statistically significant.

BAJAJ AUTO LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Bajaj Auto Limited are presented in table 3. For one unit increase in current ratio, profitability decreased by 0.012 units which was statistically significant at 1 percent level. When the liquid ratio increased by one unit, profitability increased by 0.027 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.005 units which was also statistically significant at 10 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.001 units which was not statistically significant. When the receivables turnover ratio increased by one unit, profitability increased by 0.005 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.001 units which was statistically significant at 5 per cent level. These six independent variables contribute to 97 percent of the variations in the profitability of the Bajaj Auto Limited.

HERO MOTO CORP LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Hero Moto Corp Limited are presented in table 4. For one unit increase in current ratio, profitability decreased by 0.009 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.005 units which was statistically significant at 10 per cent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.002 units which was also not statistically significant. For a one unit increase in inventory turnover ratio, profitability decreased by 0.011 units which was statistically significant at 10 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.112 units which was not statistically significant. These six independent variables contribute to 78 percent of the variations in the profitability of the Hero Moto Corp Limited. Thus, the co-efficient of LR and ITR are statistically significant.

KINETIC ENGINEERING LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Kinetic Engineering Limited are presented in table 5. For one unit increase in current ratio, profitability increased by 0.095 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.142 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.003 units which was statistically significant 5 per cent level. For a one unit increase in inventory turnover ratio, profitability decreased by 0.107 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.224 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.003 units which was statistically significant at 10 per cent level. These six independent variables contribute to 75 percent of the variations in the profitability of the Kinetic Engineering Limited. Thus, the co-efficient of WTR, ITR and CTR are statistically significant.

LML LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the LML Limited are presented in table 6. For one unit increase in current ratio, profitability decreased by 0.388 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 2.962 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.031 units which was statistically significant 5 per cent level. For a one unit increase in inventory turnover ratio, profitability decreased by 0.149 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.004 units which was not statistically significant. These six independent variables contribute to 69 percent of the variations in the profitability of the LML Limited. Thus, the co-efficient of WTR and ITR are statistically significant.

MAHARASHTRA SCOOTERS LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Maharashtra Scooters Limited are presented in table 7. For one unit increase in current ratio, profitability increased by 0.072 units which was not statistically significant. When the liquid ratio increased by one unit, profitability decreased by -0.083 units which was statistically significant at 5 per cent level. When the working capital turnover ratio increased by one unit, profitability increased by 0.001 units which was also not statistically significant. For a one unit increase in inventory turnover ratio, profitability increased by 0.007 units which was statistically significant at 1 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.003 units which was statistically significant at 1 per cent level. These six independent variables contribute to 74 percent of the variations in the profitability of the Maharashtra Scooters Limited. Thus, the co-efficients of LR, ITR and CTR are statistically significant.

MAJESTIC AUTO LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Majestic Auto Limited are presented in table 8. For one unit increase in current ratio, profitability increased by 0.064 units which was statistically significant at 1 per cent level. When the liquid ratio increased by one unit, profitability decreased by 0.158 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.003 units which was also statistically significant at 5 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.003 units which was not statistically significant. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.014 units which was statistically significant at 5 per cent level. These six independent variables contribute to 84 percent of the variations in the profitability of the Majestic Auto Limited.

SCOOTERS INDIA LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the Scooters India Limited are presented in table 9. For one unit increase in current ratio, profitability increased by 0.084 units which was not statistically significant. When the liquid ratio increased by one unit, profitability increased by 0.073 units which was statistically insignificant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.005 units which was also statistically significant at 1 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.050 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability increased by 0.004 units which was statistically significant at 5 per cent level. These six independent variables contribute to 99 percent of the variations in the profitability of the Scooters India Limited. Thus, the co-efficient of WTR, ITR and CTR are statistically significant.

TVS MOTOR COMPANY LIMITED

The pooled regression results of the model exhibiting the impact of working capital ratios on profitability of the TVS Motor Company Limited are presented in table 10. For one unit increase in current ratio, profitability decreased by 0.071 units which was not statistically significant. When the liquid ratio increased by one unit, profitability decreased by 0.193 units which was not statistically significant. When the working capital turnover ratio increased by one unit, profitability decreased by 0.004 units which was statistically significant 5 per cent level. For a one unit increase in inventory turnover ratio, profitability increased by 0.012 units which was statistically significant at 5 per cent level. When the receivables turnover ratio increased by one unit, profitability increased by 0.001 units which was not statistically significant. For a one unit increase in cash turnover ratio, profitability decreased by 0.004 units which was statistically insignificant. These six independent variables contribute to 91 percent of the variations in the profitability of the TVS Motor Company Limited. Thus, the co-efficients of WTR and ITR are statistically significant.

FINDINGS

These six independent variables contribute to 96 percent of the variations in the profitability of the Atul Auto Limited. Thus, the co-efficient of LR, ITR and CTR are statistically significant,

These six independent variables contribute to 97 percent of the variations in the profitability of the Bajaj Auto Limited.

These six independent variables contribute to 78 percent of the variations in the profitability of the Hero Moto Corp Limited. Thus, the co-efficient of LR and ITR are statistically significant.

These six independent variables contribute to 75 percent of the variations in the profitability of the Kinetic Engineering Limited. Thus, the co-efficient of WTR, ITR and CTR are statistically significant.

These six independent variables contribute to 69 percent of the variations in the profitability of the LML Limited. Thus, the co-efficient of WTR and ITR are statistically significant.

These six independent variables contribute to 84 percent of the variations in the profitability of the Majestic Auto Limited.

These six independent variables contribute to 99 percent of the variations in the profitability of the Scooters India Limited. Thus, the co-efficients of WTR, ITR and CTR are statistically significant.

These six independent variables contribute to 91 percent of the variations in the profitability of the TVS Motor Company Limited. Thus, the co-efficients of WTR and ITR are statistically significant.

RECOMMENDATION AND CONCLUSION

In two and three wheeler sector, the new units will have to be set up based on internationally competitive technology, apart from upgrading and modernization of the existing units. The profitability of the two and three wheeler sector companies improved during the last five years mainly due to higher production as well as sales of saleable vehicles, coupled with improvement in product-mix, productivity and techno economic parameters as well as higher sales realization, in spite of increase in costs and travel freight on inputs. The overall results of the model showing impact of working capital on profitability are encouraging.

REFERENCES

1. Ahmadi Mosa, Saie Iraj and Garajafary Maryam, (2012), *Studying the Relationship between Working Capital Management and Profitability at Tehran Stock Exchange: A Case Study of Food Industry, Research Journal of Applied Sciences, Engineering and Technology,* Vol. 4, No. 13, pp. 1868-1874
2. Quayyaum Sayeda Tahmina, (2012), *Relationship between Working Capital Management and Profitability in Context of Manufacturing Industries in Bangladesh, International Journal of Business and Management,* Vol. 7, No. 1, pp. 58-69
3. Banos-Caballero Sonia, Garcia-Teruel Pedro J. and Martinez-Solano Pedro, (2012), *How does Working Capital Management affect the Profitability of Spanish SMEs ?, Small Business Economics,* Vol. 39, No. 2, pp. 517-529
4. Akino Olayinka Olufisayo, (2012*), Determinants of Working Capital Requirement in Selected Quoted Companies in Nigeria, Journal of African Business,* Vol.13, No. 1, pp. 40-50
5. Bei Zhao and Wijewardana W. P., (2012), *Working Capital Policy Practice: Evidence from Sri Lankan Companies, Procedia- Social and Behavioral Sciences,* Vol. 40, pp. 695-700.

6. Nakamura Palombini Nathalle Vicente and Nakamura Wilson Toshiro, (2012), *Key Factors in Working Capital Management in the Brazilian Market, RAE Sao Paulo,* Vol. 52, No. 1, pp. 55-69.
7. Ding Sai, Guariglia Alessandra and Knight John, (2012), *Investment and Financing Constraints in China: Does Working Capital Management make a Difference? Journal of Banking and Finance,* Vol. XXX, No. XXX-XXX, pp. 1-18.
8. Samson Adediran A, Mary Josiah, Yemisi Bosun-Fakunle and Erekpitan Imuzeze O, (2012), *The Impact of Working Capital on the Profitability of Small and Medium Scale Enterprises in Nigeria, Research Journal of Business Management,* Vol. 6, No. 2, pp. 61-69.
9. Ching h.y., Novazzi A. and Gerab F.,(2012), *Relationship between working capital management and profitability in Brazilian listed companies. Journal of global business and economics,*Vol.3, pp.74-86.
10. Akoto Richard K., Vitor Dadson A. and Angmor Peter L., (2013), *Working Capital Management and Profitability: Evidence from Ghanaian Listed Manufacturing Firms, Journal of Economics and International Finance*, Vol. 5, No. 9, pp. 373-379.

ANNEXURE

TABLE 1: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (TOTAL INDUSTRY)

(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR+ b_4 ITR + b_5 RTR + b_6 CTR)

Variables	Beta Co-efficient	t-value
Constant	-0.273	
Current ratio	0.341	3.214**
Liquid ratio	-0.334	-4.274*
Working capital turnover ratio (WTR)	0.001	-2.070
Inventory turnover ratio (ITR)	0.016	3.009**
Receivable turnover ratio (RTR)	0.001	0.273
Cash turnover ratio (CTR)	0.001	2.289
R^2 = 0.893		
Adj R^2 = 0.679		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 2: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (ATUL AUTO LIMITED)

(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR+ b_4 ITR + b_5 RTR + b_6 CTR)

Variables	Beta Co-efficient	t-value
Constant	-1.216	
Current ratio	1.070	2.118
Liquid ratio	0.001	0.003**
Working capital turnover ratio (WTR)	0.002	1.963
Inventory turnover ratio (ITR)	-0.013	-1.182*
Receivable turnover ratio (RTR)	0.007	2.240
Cash turnover ratio (CTR)	-0.024	-1.236*
R^2 = 0.961		
Adj R^2 = 0.882		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 3: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILIT (BAJAJ AUTO LIMITED)

(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR+ b_4 ITR + b_5 RTR + b_6 CTR)

Variables	Beta Co-efficient	t-value
Constant	0.015	
Current ratio	-0.012	-3.920*
Liquid ratio	0.027	4.649
Working capital turnover ratio (WTR)	0.005	2.826***
Inventory turnover ratio (ITR)	0.001	-2.000
Receivable turnover ratio (RTR)	0.005	-1.440
Cash turnover ratio (CTR)	0.001	-3.241**
R^2 = 0.969		
Adj R^2 = 0.907		

Source: Computed from the annual reports of the respective units

*Significant at 0.01 level
**Significant at 0.05 level
***Significant at 0.10 level

TABLE 4: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (HERO MOTO CORP LIMITED)

(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR+ b_4 ITR + b_5 RTR + b_6 CTR)

Variables	Beta Co-efficient	t-value
Constant	-0.180	
Current ratio	-0.009	-0.043
Liquid ratio	0.005	-0.035***
Working capital turnover ratio (WTR)	0.002	-0.471
Inventory turnover ratio (ITR)	0.011	1.041***
Receivable turnover ratio (RTR)	0.001	0.461
Cash turnover ratio (CTR)	-0.112	0.401
R^2 = 0.782		
Adj R^2 = 0.713		

***Significant at 0.10 level

Source: Computed from the annual reports of the respective units

TABLE 5: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (KINETIC ENGINEERING LIMITED)

$(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR)$

Variables	Beta Co-efficient	t-value
Constant	-0.491	
Current ratio	0.095	0.809
Liquid ratio	0.142	0.947
Working capital turnover ratio (WTR)	-0.003	-0.905**
Inventory turnover ratio (ITR)	-0.107	-0.788**
Receivable turnover ratio (RTR)	0.224	0.993
Cash turnover ratio (CTR)	0.003	0.279***
R^2 = 0.751		
Adj R^2 = 0.724		

**Significant at 0.05 level
***Significant at 0.10 level

Source: Computed from the annual reports of the respective units

TABLE 6: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (LML LIMITED)

$(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR)$

Variables	Beta Co-efficient	t-value
Constant	0.027	
Current ratio	-0.388	-1.129
Liquid ratio	2.962	0.720
Working capital turnover ratio (WTR)	-0.031	-0.432**
Inventory turnover ratio (ITR)	-0.149	-2.066**
Receivable turnover ratio (RTR)	0.001	0.719
Cash turnover ratio (CTR)	-0.004	-0.918
R^2 = 0.691		
Adj R^2 = 0.632		

**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 7: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (MAHARASHTRA SCOOTERS LIMITED)

$(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR)$

Variables	Beta Co-efficient	t-value
Constant	0.025	
Current ratio	0.072	0.494
Liquid ratio	-0.083	-0.439**
Working capital turnover ratio (WTR)	0.001	0.462
Inventory turnover ratio (ITR)	0.007	0.701*
Receivable turnover ratio (RTR)	0.001	-0.110
Cash turnover ratio (CTR)	0.003	-0.264*
R^2 = 0.736		
Adj R^2 = 0.684		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 8: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (MAJESTIC AUTO LIMITED)

$(PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR)$

Variables	Beta Co-efficient	t-value
Constant	0.105	
Current ratio	0.064	0.676*
Liquid ratio	-0.158	-1.135
Working capital turnover ratio (WTR)	-0.003	-1.825**
Inventory turnover ratio (ITR)	0.003	0.283
Receivable turnover ratio (RTR)	0.001	0.054
Cash turnover ratio (CTR)	0.014	2.104**
R^2 = 0.835		
Adj R^2 = 0.796		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 9: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (SCOOTERS INDIA LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	-0.624	
Current ratio	0.084	1.775
Liquid ratio	0.073	1.214
Working capital turnover ratio (WTR)	-0.005	-6.438*
Inventory turnover ratio (ITR)	0.050	2.496**
Receivable turnover ratio (RTR)	0.001	2.158
Cash turnover ratio (CTR)	0.004	2.484**
R^2 = 0.994		
Adj R^2 = 0.982		

*Significant at 0.01 level
**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

TABLE 10: ESTIMATED REGRESSION RESULTS OF IMPACT OF WORKING CAPITAL RATIOS ON PROFITABILITY (TVS MOTOR COMPANY LIMITED)

($PBT/TA = b_0 + b_1 CR + b_2 LR + b_3 WTR + b_4 ITR + b_5 RTR + b_6 CTR$)

Variables	Beta Co-efficient	t-value
Constant	0.006	
Current ratio	-0.071	-0.604
Liquid ratio	-0.193	-1.881
Working capital turnover ratio (WTR)	-0.004	-0.471**
Inventory turnover ratio (ITR)	0.012	3.088**
Receivable turnover ratio (RTR)	0.001	0.822
Cash turnover ratio (CTR)	-0.004	-0.448
R^2 = 0.910		
Adj R^2 = 0.731		

**Significant at 0.05 level

Source: Computed from the annual reports of the respective units

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