

A Study on the Financial Performance of Mahindra and Mahindra Company

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Abstract

Automobile industry is one of the key sector of India like steel, fertilizer etc. and Mahindra & Mahindra is one of the auto-mobile manufacturing company with various other subsidiaries. This company which is well known for four wheeler trucks and cars etc. and has adequate market share in other sectors as well. The study's main attention is to analyze the overall performance of the Mahindra and Mahindra Company and to determine the overall assets and liabilities and income and expenditure. The core area of business of Mahindra & Mahindra is manufacturing and sale of automobile related products and services. The existing study of Mahindra and Mahindra Ltd. was carried out to identify and analyze the current financial position on the basis of past ten years financial statement. Ratio analysis is an appropriate tool used by individuals to conduct a comprehensive quantitative analysis of information in company's Annual Reports of past ten years. It reveals the insights regarding profitability, liquidity, solvency as well as operational efficiency.

Keywords: Financial ratio – Return on Assets (ROA), Current Ratio, sales Growth etc.

Introduction:

Mahindra and Mahindra Limited is a international automobile manufacturing enterprise located in Mumbai. It was originated in 1945 as “Mahindra & Mohammed”, then renamed “Mahindra & Mahindra”(M&M). M&M, established under the flagship of Mahindra Group, is one of India's top most automobile manufacturers in terms of global production.

Finance is a essential and vital aspect of every business. The achievement of an organization depends on how proficiently the firm/company is handling the funds available to them. The present research paper is “a study on the financial performance of Mahindra and Mahindra Company”. There are numerous stakeholders in a company, including trade investors, creditors, bondholders, employees as well as management. Each group has its particular types interest in tracking the financial performance of a company. Therefore it is necessary to understand financial performance of every organization since most crucial decisions of the organization's depend on the financial performances. To analyze financial performance, it is necessary to evaluate company's operating and financial status by examining accounting and financial statements. The main objective of this study is to assess the efficiency and effectiveness of the company's management which is replicated in the financial reports.

SCOPE OF THE STUDY

The study is based on the Annual Reports of past ten years of Mahindra and Mahindra Company. The

research paper covers the period of 2014-2023 for analyzing the financial statement such as balance sheet and statement of profit and loss. The scope of the study encompasses the various factors that affect the financial position of the company. This study finds out the operational status of the organization and allocation of resources to improve the position of the organization. The data of the past ten years are taken into consideration for the study. This study finds out the areas where Mahindra and Mahindra can expand the business of its assets and funds employed.

OBJECTIVES OF THE STUDY

1. To compare and analyze the financial statements for the past ten financial years.
2. To find the liquidity position of the Mahindra and Mahindra and the activity of the assets and liabilities using the liquidity ratios.
3. To assess the long-term solvency, and profitability of Tata motors ltd.
4. To forecast the future and show the trend rate of Mahindra and Mahindra
5. To know the Profitability, Activity, Solvency & Financial stability position of Mahindra and Mahindra.
6. To predict the annual growth rate of income of the Mahindra and Mahindra with the help of Multiple regression Model.
7. To provide recommendations for improving the total overall finance performance of the Mahindra and Mahindra.

STATEMENT OF THE PROBLEM

Financial statement analysis and interpretation is a common practice for evaluating a company's performance. Every organization must analyze their performance each year in order to gain a foothold in the market. Here is a report on Tata Motors' financial performance. It represents the company's financial performance and future potential.

LIMITATION OF THE STUDY

1. The secondary data was used in this study.
2. It does not cover non-financial data viz. quality which may impact financial performance .
3. The research is based on historical data that's may or may not entirely reliable.
4. Changes in price level were also not taken into account.

REVIEW OF LITERATURE

Jaydeep Ramanuj, Salina Memon (2023) Their study is aimed to find out the liquidity and profitability performance of companies and to check relationship between liquidity and profitability of selected companies. For the purpose of the study three companies are selected from the Automobile sectors which are Maruti Suzuki India Ltd., Tata Motors and Mahindra and Mahindra Ltd. The data is collected from annual report of selected companies. The study period is for 10 years. From 2013-14 to 2022-23. From the analysis it has been observed that in liquidity ratio, Mahindra and Mahindra Ltd. Performed better than Maruti Suzuki India Ltd and Tata Motors Ltd. while in profitability ratio Maruti Suzuki India Ltd. Performed better than Mahindra and Mahindra Ltd and Tata Motors Ltd. From the regression analysis it was observed that there is no statistically significant relationship between the

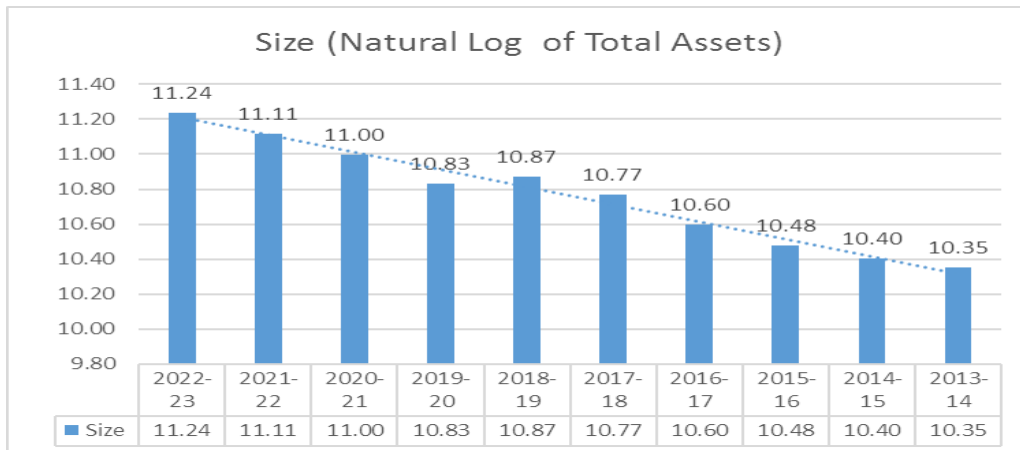
liquidity ratio on profitability ratio. So, study concludes that there is no impact of liquidity ratio on profitability ratio. (Ramanuj & Memon, 2023)

Shivam Saraswat , Sumit Singh , Sonali Choudhary (2023) have studied financial performance on Mahindra and Mahindra Company. Main objective of the study was to evaluate the effectiveness of Mahindra Automobiles Company's marketing strategy and learn more about how well marketing methods are working to increase product sales. He suggested that Mahindra Automobiles must upgrade its technology to satisfy the evolving needs and preferences of its customers. (Saraswat et al., 2023)

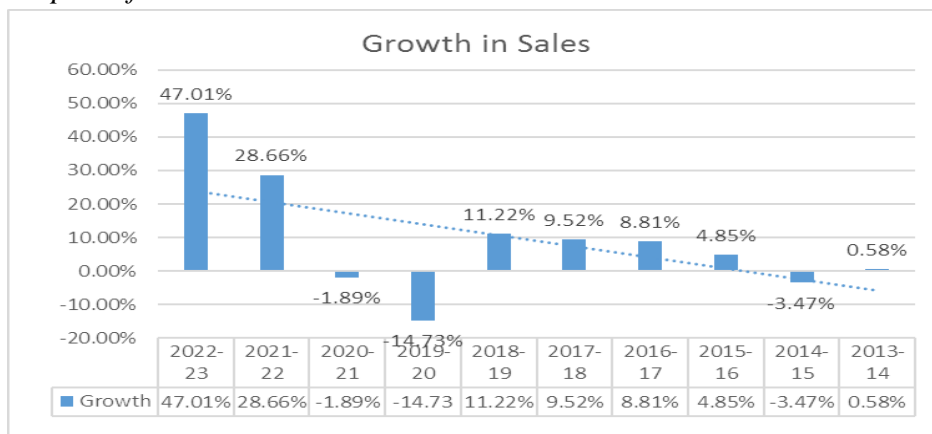
Mr . S. Muruganatham & S. Arun (2021) (12) in their study on financial performance of Mahindra and Mahindra company, it was found that liquidity ratios(2014-2015 to 2018-2019) were not up to their standard level so they need to increase the level of current assets to meet their short-term debts. This study resulted that the overall efficiency of business is good. For future growth, Mahindra and Mahindra Company should reduce the cash outflow and expenses. Then they will increase their turnover and profit which helps to increase financial performance of business. (Muruganatham & Arun, 2021)

Dr. Madhvi Kush& Tilak Raj Chadha (2022) “Financial Performance Analysis of Automobile Industry with Special Reference to Ratios” both have concentrated on ratios and financial performance of automobile industry. They have analysed that Ratio analysis helps to tell the financial soundness of the organizations. There are various tools and techniques which are used in this study to analyse the financial performance of the selected companies. By calculating different ratios this study concludes that Maruti has higher Gross Profit Ratio as compared to Tata which shows that Maruti has high profit margin after deducting cost. Debt to Equity Ratio of Maruti is lower as compared to Tata which tells Maruti Suzuki has more reliable for investors. Earnings per share of Maruti has not much fluctuations but Tata showing very high fluctuations which is not good for Tata because investors do not rely on Tata's performance due to high fluctuations. Dividend is the income for shareholders they want to earn dividend income and Capital appreciation, in this study Maruti has given very good dividend to their shareholders whereas Tata has not given any dividend to their shareholders in any year which shows that most of the investors want to invest in Maruti and enjoy the dividend income. Every organisation wants to work for net profits, Net Profit Ratio of Maruti was going decreasing every year whereas Tata's Net Profit Ratio is improving first three years and in fourth year decreased drastically because of covid pandemic and increase in fifth year which shows Tata is working hard to improve their net profits whereas Maruti is not able to increase their net profits. By considering all the key performance indicators, Maruti Suzuki is performing well as compared to Tata. Tata needs to improve their all key ratios and increase their net profits which are very less as compared to Maruti. Lastly this study concludes that Maruti Suzuki is performing well as compared to Tata and more investors want to invest in Maruti Suzuki. (Assistant & Raj, 2022)

Dr. K. Gandhi (2017) in their study “Profitability Analysis of Select Automobile Companies in India – With Special Reference to Tata Motors And Mahindra and Mahindra” found that net profit of Tata Motors decreased during the study period, net profit of Mahindra and Mahindra Ltd. increased considerably. It was also evidenced that profitability in terms of net profit ratio, operating profit ratio, return on assets, return on investments and earnings per share of Mahindra and Mahindra Ltd. was better than Tata Motors Ltd. during the study period. The results of ANOVA indicated that significant differences were found in net profit ratio, return on assets and earnings per share among the sample companies and in case of operating profit ratio and return on investments, no significant differences were found among sample companies. (Gandhi, 2017)(Gandhi, 2017)



Source : Annual Report of Mahindra and Mahindra Limited

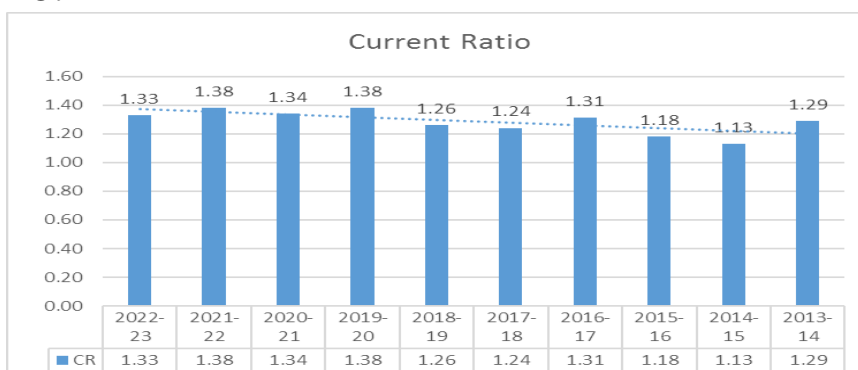


Source : Annual Report of Mahindra and Mahindra Limited

FINANCIAL RATIO:

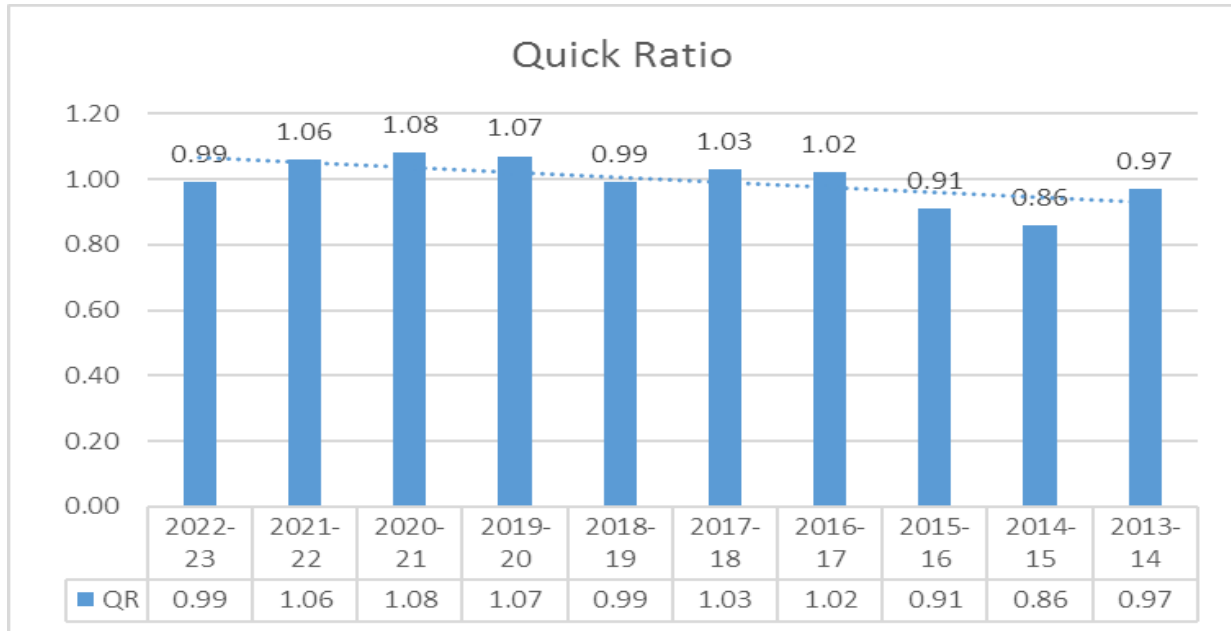
The performance of the company's operations regulates the firm's value based management i.e. based on the company's financial ratio analysis. Financial Ratios can be divided into Liquidity Ratios, Leverage Ratios, Solvency Ratios and Activity Ratios. The main objective as well as goal of financial ratio analysis is to help the company discover its financial strengths and weaknesses company , as well as the financial statement performance, so that all obtainable resources can be utilized to meet the company's goals.

LIQUIDITY RATIO:



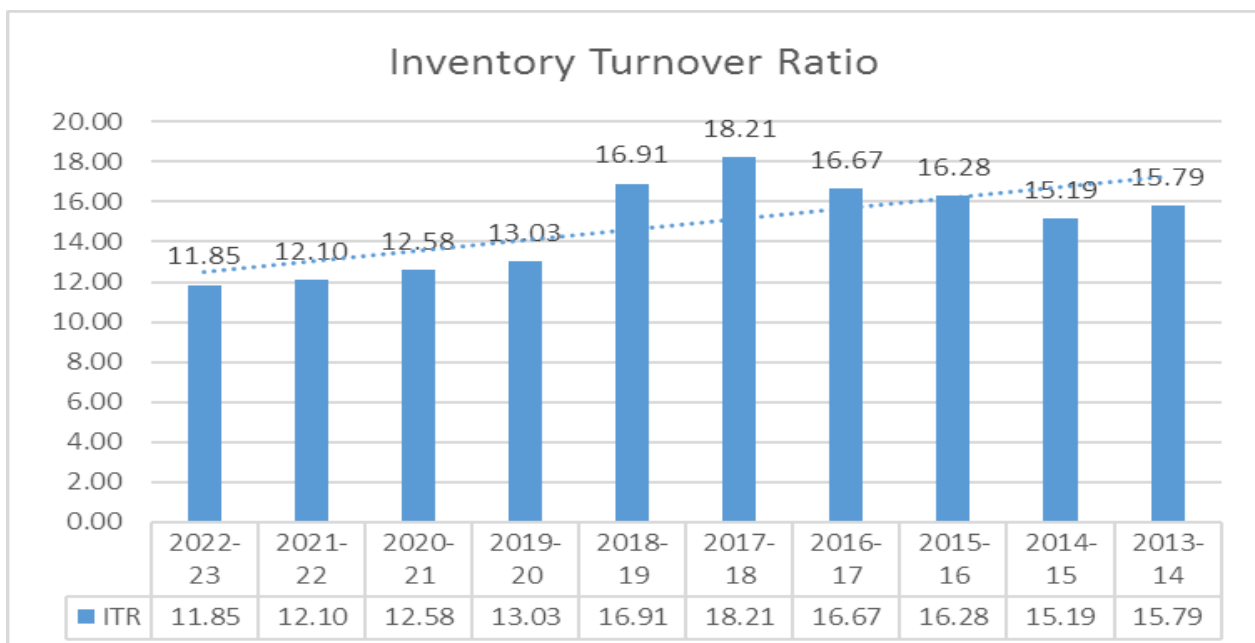
Source : Annual Report of Mahindra and Mahindra Limited

Interpretation: The above table shows that the current ratio in the year 2014-15 was 1.13 (minimum) and 2019-20 as well as 2021-22 was 1.38 (maximum) .



Source : Annual Report of Mahindra and Mahindra Limited

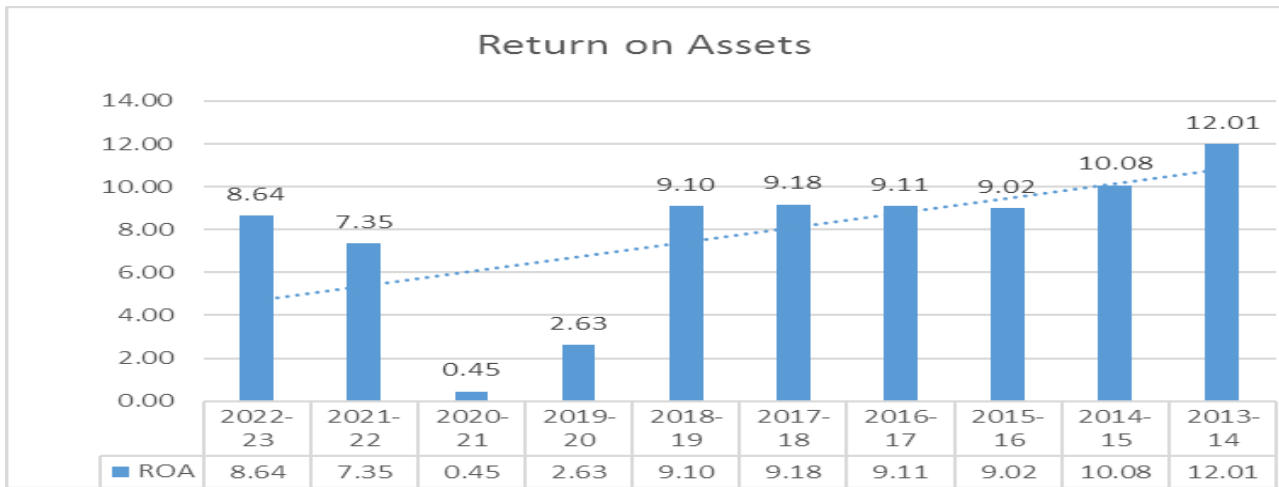
Interpretation: The above table shows that the quick ratio in the year 2014-15 was 0.86 (minimum) and 2020-21 was 1.08 (maximum) .



Source : Annual Report of Mahindra and Mahindra Limited

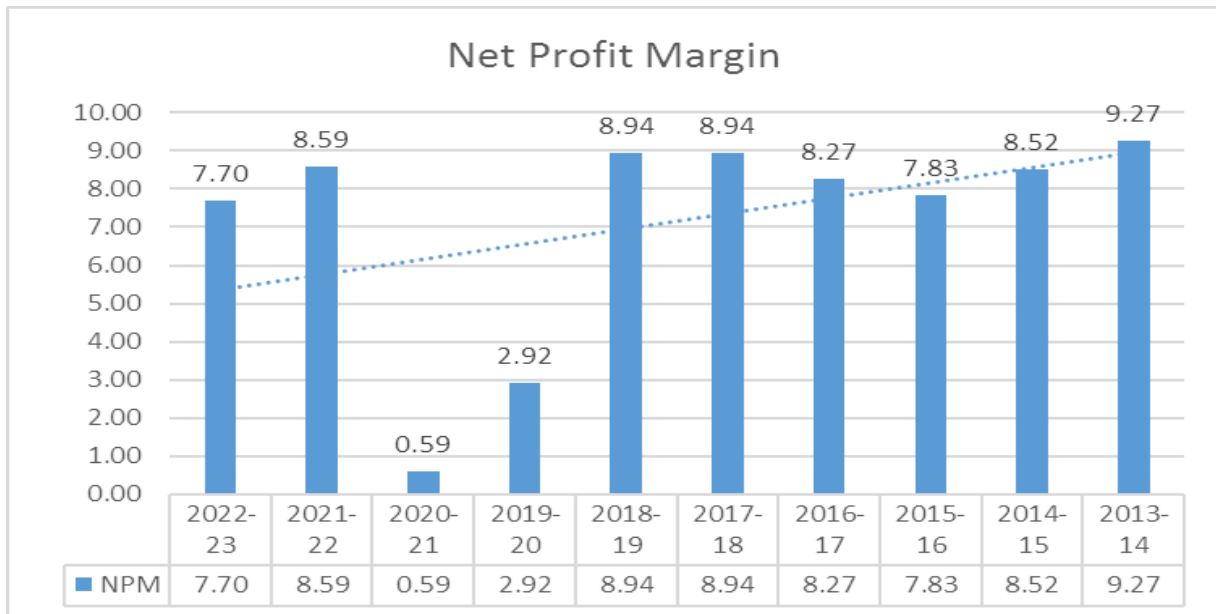
Interpretation: The above chart shows the Mahindra and Mahindra company ability to generate sales by utilizing their assets. Improvement ITR shows the company’s ability to grasp profits using their assets. It also indicates that the company has efficiently utilized their assets to generate sales. However, there have been instances where the company failed miserably to generate sales out of their assets.

PROFITABILITY RATIO :



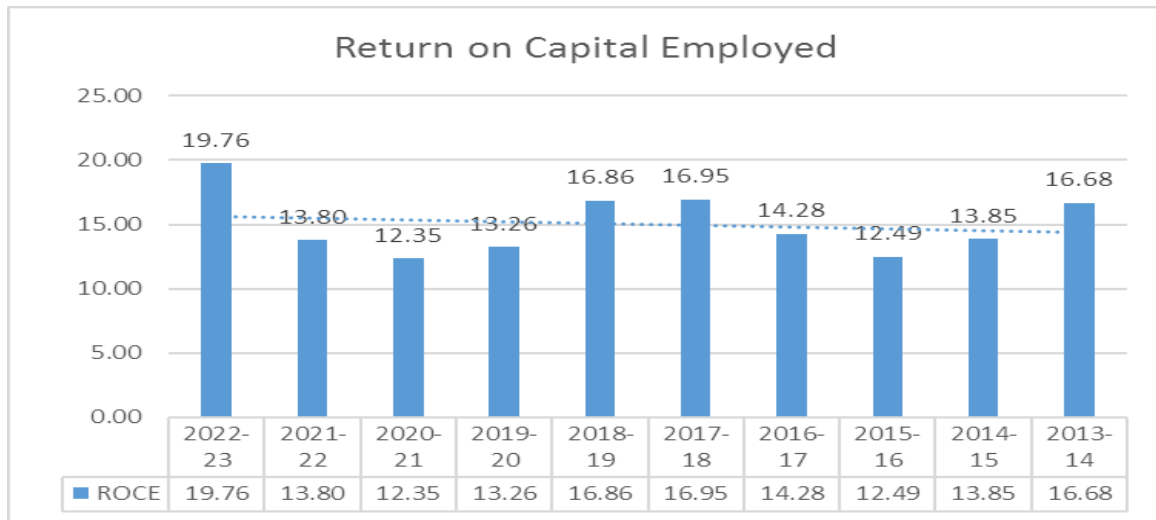
Source : Annual Report of Mahindra and Mahindra Limited

Illustration : Return on assets (ROA) of a firm measures its operating efficiency in generating profits from its assets, before the effects of financing. Mentioned above a graph of ROA from 2013-14 to 2022-24 , Based on current data, the higher the Return on Assets (ROA) ratio, the more competent the business is using assets to generate profits that results to better company's performance.



Source : Annual Report of Mahindra and Mahindra Limited

Illustration: The above graph shows the firm managed to earn substantial amount of profits out of sales with a maximum of 9.27 in 2013-14 and minimum of 0.59(COVID-19) in 2020. The average Net profit margin comes out to be 6.2 with a standard deviation of 3.04. The figures of 2020 (COVI-19) raise a serious concern for the investors as company failed to ascertain profits due to decreasing demand.



Source : Annual Report of Mahindra and Mahindra Limited

Illustration: The above graph represents the Mahindra and Mahindra company’s capability to generate returns by utilizing their capital. The company managed to earn excellent returns by professionally deploying their resources against investments. However, in 2023 they achieved steadily in deploying their assets as the ROCE came out to be 19.76 which shows the firm’s ability to achieve effective investment policies.

RESEARCH METHODOLOGY

Secondary data of Mahindra and Mahindra Company was used as a source for the study and was collected from Annual reports, Financial Statements and from website www.moneycontrol.com. To analyze the financial performance selected ratios were calculated and statistical tools like arithmetic mean, standard deviation, co-efficient of variation and one-way analysis of variance test (ANOVA) were used to find research outcome.

Period of the study :

The study is carried out based on 10 years from 01/04/2013 to 31/03/2023 (FY 2014-2023).

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Return on Assets	10	11.56	.45	12.01	7.7570	3.51761	-1.356	.687
Current Ratio	10	.25	1.13	1.38	1.2840	.08262	-.693	.687
Quick Ratio	10	.22	.86	1.08	.9980	.07068	-.836	.687
Working Capital Turnover Ratio	10	26.10	8.39	34.49	15.8780	7.89445	1.642	.687
Inventory Holding Period	10	10.75	20.04	30.79	25.1100	3.97809	.356	.687
Average Collection Period	10	12.12	14.76	26.88	21.3330	3.46763	-.693	.687
Average Payment Period	10	21.08	57.60	78.68	66.1450	7.55281	.303	.687
Cash Conversion Cycle	10	21.27	-32.02	-10.75	-19.7020	6.54987	-.465	.687
Debt Ratio	10	.14	.32	.46	.3880	.04780	-.059	.687
Size	10	.89	10.35	11.24	10.7650	.30351	.074	.687
Growth	10	.62	-.15	.47	.0920	.17542	1.126	.687

Correlations	Return on Assets	Size	Growth	Current Ratio	Debt Ratio	Inventory Holding Period	Average Collection Period	Average Payment Period	Cash Conversion Cycle
Return on Assets	1	-.502	.299	-.544	.216	-.565	-.196	-.679*	.336
Size	-.502	1	.623	.668*	.024	.706*	-.539	.896**	-.890**
Growth	.299	.623	1	.220	.334	.369	-.903**	.326	-.629
Current Ratio	-.544	.668*	.220	1	-.048	.643*	-.278	.755*	-.627
Debt Ratio	.216	.024	.334	-.048	1	.386	-.636*	.023	-.128
Inventory Holding Period	-.565	.706*	.369	.643*	.386	1	-.525	.754*	-.540
Average Collection Period	-.196	-.539	-.903**	-.278	-.636*	-.525	1	-.340	.603
Average Payment Period	-.679*	.896**	.326	.755*	.023	.754*	-.340	1	-.875**
Cash Conversion Cycle	.336	-.890**	-.629	-.627	-.128	-.540	.603	-.875**	1

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

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

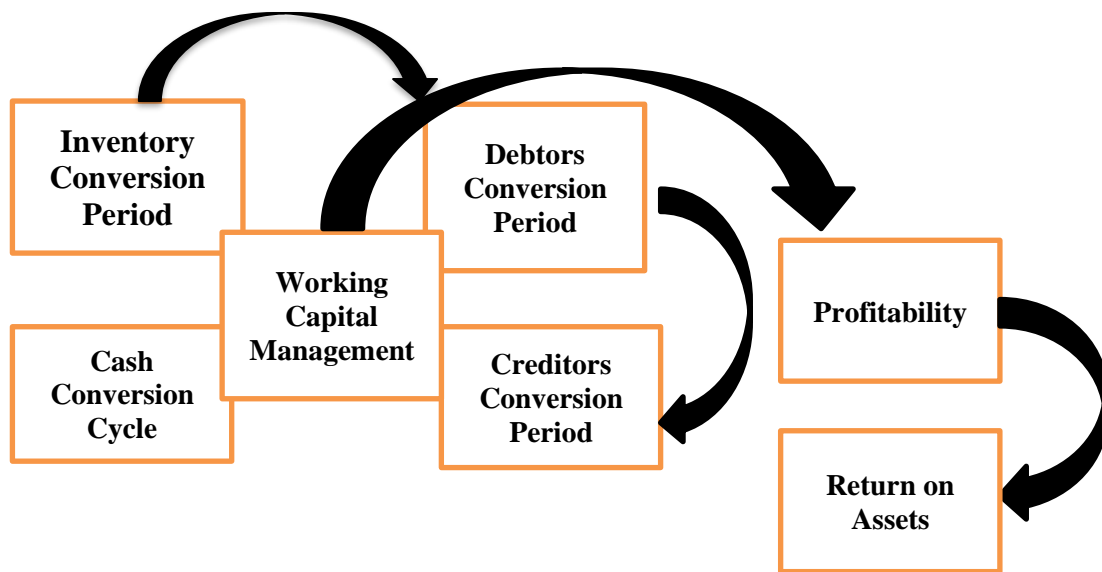
The table cited above reflects the descriptive statistics of the variables used in the stated research paper. The table mentioned above shows that the mean value of Inventory Holding Period 25 days with a standard deviation of 3.97 suggesting that it takes the company on an average 25 days to sell inventory. The mean value of Average Collection Period is 21 days, standard deviation 3.46 pointing to the fact that it takes the company around 21 days to collect cash from credit sales. The mean value of Average Payment Period is 66 days with a standard deviation of 7.55 which means that the company takes about 66 days to make payment to its traders. Moreover, the mean value of Cash Conversion Cycle is - 19 days, standard deviation 6.54.

Profitability of a company is generally depending on working capital management. Working capital indicators such as Inventory Holding Period, Average Collection Period, Average Payment Period and Cash Conversion Cycle should have a relationship with profitability indicators.

The results of the correlation suggest that Return on Assets(ROA) is negatively related with Average Collection Period (ACP), Inventory Holding Period (IHP), Average Payment Period(APP), Firm Size as well as Current ratio(CR). A negative coefficient (-.196) is found between ROA and ACP which supports the view that the profitability increases with decreasing average collection period. ROA and IHP with a correlation coefficient of (-.565) suggest that those firms which have a shorter inventory conversion period are more profitable than those firms with longer inventory conversion period. The correlation coefficient between ROA and CCC is (-.336) pointing to the fact that firms can increase its profitability by decreasing its CCC. The negative relationship between ROA and Current ratio with a

correlation coefficient of (-.544) implies that profitability and liquidity are inversely related. Thus, it also indicates that an increase in the current assets, under the constraint of constant current liabilities, would lead to a reduction in firm’s profits. With regard to other variables a significant positive correlation is seen between ROA, CCC, Debt Ratio and Firm Size, as depicted by the table above. ROA and CCC with a correlation coefficient of (.336) suggest that offset the positive effect of CCC increases debt to increase its profitability. ROA and Debt Ratio with a correlation coefficient of (.216) indicate that the firm in question in order to offset the positive effect of CCC increases debt to increase its profitability. Furthermore, ROA and Firm Size with a correlation coefficient of (-.502) indicate that any increase or decrease in ROA is negative related with Firm Size.

Model :



Hypothesis - 1

Keeping in the view the objective of the study, the following hypotheses are formulated: 1. H₀: Influence of Current Ratio on ROA is insignificant.

2. H₀: Influence of Debt Ratio on ROA is insignificant.

3. H₀: Influence of Growth on ROA is insignificant.

4. H₀: Influence of Size (Total Assets) on ROA is insignificant.

5. H₀: Influence of Average Collection Period on ROA is insignificant.

Model 1

Model Summary					
Model-1	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.984 ^a	.968	.927	.95014	
a. Predictors: (Constant), Average Collection Period, Current Ratio, Debt Ratio, Size , Growth					
ANOVA ^b					
Model - 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	107.751	5	21.550	23.871	.004 ^a
Residual	3.611	4	.903		
Total	111.362	9			

Model Summary					
Model-1	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.984 ^a	.968	.927	.95014	
a. Predictors: (Constant), Average Collection Period, Current Ratio, Debt Ratio, Size , Growth					
b. Dependent Variable: Return on Assets					
Coefficients ^a					
Model -1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	99.900	23.053		4.334	.012
Current Ratio	10.382	6.380	.244	1.627	.179
Debt Ratio	34.946	14.528	.475	2.405	.074
Growth	44.784	7.442	2.233	6.017	.004
Size	-14.487	1.940	-1.250	-7.469	.002
Average Collection Period	1.538	.450	1.516	3.416	.027
a. Dependent Variable: Return on Assets					

Interpretations: From the above table, it is revealed that there is 96.8% impact of Independent variable (i.e., Average Collection Period, Current Ratio, Debt Ratio, Size, Growth) on Dependent variable (i.e., Return on Assets). ANOVA table shown above, it is found insignificant because p value is 0.004 which is lesser than 0.05.

In the above model, t value for Average Collection Period is highly significant at 5 percent level. It indicates that with increasing level of Average Collection Period, ROA will be increased 3.416 levels.

The models are as follows:

Model 1

$$ROA = \beta_0 + \beta_1 (CR_t) + \beta_2 (DR_t) + \beta_3 (Growth_t) + \beta_4 (Size_t) + \beta_5 (ACC_t) + e_t$$

The formulated model is statistically significant and can be used for the prediction of ROA. This favors the rejection of null hypothesis. The p value of Growth, Size and ACP is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROA.

Based on the nonstandard coefficients we find the multiple regression equation:

$$ROA = 99.900 + 10.382 (CR_t) + 34.946(DR_t) + 44.784 (Growth_t) - 14.487(Size_t) + 1.538 (ACC_t) + e_t$$

Model 1 shows that CR and DR have positively influenced ROA. Coefficient of CR (10.382) and DR (34.946) indicates that for every one unit change in CR & DR , there is a change in ROA (10.382 and 34.946 unit in CR & DR respectively). However, it can be observed that Regression coefficient of CR and DR is statistically insignificant at 5% level of significance (Sig. > 0.05). Therefore, the Null Hypothesis H_{01a} is accepted. Growth is positively influencing ROA. Coefficient of Growth (44.784) indicates that for every one unit change in Growth, there is a 44.478 unit change in ROA. It can be observed that Regression coefficient of Growth is statistically significant at 5% level of significance (Sig. < 0.05). Therefore, the Null Hypothesis H_{02a} is rejected. Size has significant negative relationship with ROA at 5% level of significance. Coefficient value of Size (-14.487) indicates that for one unit change in Size, there is -14.487 unit change in ROA. The regression coefficient of Size is statistically significant at 5% level of significance (Sig. < 0.05). Therefore, the Null Hypothesis H_{03a} is rejected. Average Collection Period (ACP) has significant positive relationship with ROA at 5% level of significance. Coefficient value of ACP (1.538) indicates that for one unit change in ACP, there is 1.538

unit change in ROA. The regression coefficient of ACP is statistically significant at 5% level of significance (Sig. < 0.05). Therefore, the Null Hypothesis H_{04a} is rejected.

Hypothesis - 2

Keeping in the view the objective of the study, the following hypotheses are formulated: 1. H_0 : Influence of Current Ratio on ROA is insignificant.

2. H_0 : Influence of Debt Ratio on ROA is insignificant.

3. H_0 : Influence of Growth on ROA is insignificant.

4. H_0 : Influence of Size (Total Assets) on ROA is insignificant.

5. H_0 : Influence of Inventory Holding Period on ROA is insignificant

Model Summary					
Model -2	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.952 ^a	.906	.789	1.61623	
a. Predictors: (Constant), Inventory Holding Period, Growth, Debt Ratio, Current Ratio, Size					
ANOVA ^b					
Model - 2	Sum of Squares	df	Mean Square	F	Sig.
Regression	100.914	5	20.183	7.726	.035 ^a
Residual	10.449	4	2.612		
Total	111.362	9			
a. Predictors: (Constant), Inventory Holding Period, Growth, Debt Ratio, Current Ratio, Size					
b. Dependent Variable: Return on Assets					
Coefficients ^a					
Model -2	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	119.544	40.192		2.974	.041
Current Ratio	3.251	9.918	.076	.328	.760
Debt Ratio	4.522	16.252	.061	.278	.795
Growth	19.057	4.863	.950	3.919	.017
Size	-10.361	4.036	-.894	-2.567	.062
Inventory Holding Period	-.316	.266	-.357	-1.190	.300
a. Dependent Variable: Return on Assets					

Interpretations: From the above table, it is revealed that there is 90.6% impact of Independent variable (i.e., Inventory Holding Period, Growth, Debt Ratio, Current Ratio, Size) on Dependent variable (i.e., Return on Assets). ANOVA table shown above, it is found insignificant because p value is 0.035 which is lesser than 0.05. It means there is a strong relationship between ROA and Inventory Holding Period, Growth, Debt Ratio, Current Ratio & Size .

$$\text{Model 2 ROA} = \beta_0 + \beta_1 (\text{CR}_t) + \beta_2 (\text{DR}_t) + \beta_3 (\text{Growth}_t) + \beta_4 (\text{Size}_t) + \beta_5 (\text{IHP}_t) + e_t$$

However , In the above model, t value for Inventory Holding Period is not significant at 5 percent level.

Therefore, $ROA = 119.544 + 3.251 (CR_t) + 4.522 (DR_t) + 19.057(Growth_t) - 10.361 (Size_t) - .316 (IHP_t) + e_t$

The p value of Growth only is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROA.

Model 2 shows that CR and DR have positively influenced ROA. Coefficient of CR (3.251) and DR (4.522) indicates that for every one unit change in CR & DR there is a unit change in ROA of 3.251 and 4.522 in CR & DR respectively. However, it can be observed that Regression coefficient of CR and DR are statistically insignificant at 5% level of significance (Sig. > 0.05). Therefore, the Null Hypothesis H_{01b} is accepted. Growth is positively influencing ROA. Coefficient of Growth (19.057) indicates that for every one unit change in Growth, there is a 19.057 unit change in ROA. It can be observed that Regression coefficient of Growth is statistically significant at 5% level of significance (Sig. < 0.05). Therefore, the Null Hypothesis H_{02b} is rejected.

It can also be observed that Regression coefficient of Size and Inventory Holding period are statistically insignificant at 5% level of significance (Sig. > 0.05). Therefore, the Null Hypothesis H_{03b} is accepted.

Hypothesis - 3

Keeping in the view the objective of the study, the following hypotheses are formulated: 1. H_0 : Influence of Current Ratio on ROA is insignificant.

2. H_0 : Influence of Debt Ratio on ROA is insignificant.

3. H_0 : Influence of Growth on ROA is insignificant.

4. H_0 : Influence of Size (Total Assets) on ROA is insignificant.

5. H_0 : Influence of Average Payment Period on ROA is insignificant

Model Summary					
Model - 3	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.936 ^a	.877	.723	1.85236	
a. Predictors: (Constant), Average Payment Period, Debt Ratio, Growth, Current Ratio, Size					
ANOVA ^b					
Model - 3	Sum of Squares	df	Mean Square	F	Sig.
Regression	97.637	5	19.527	5.691	.058 ^a
Residual	13.725	4	3.431		
Total	111.362	9			
a. Predictors: (Constant), Average Payment Period, Debt Ratio, Growth, Current Ratio, Size					
b. Dependent Variable: Return on Assets					
Coefficients ^a					
Model -3	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	176.568	76.807		2.299	.083
Current Ratio	-2.244	11.454	-.053	-.196	.854
Debt Ratio	-10.276	15.584	-.140	-.659	.546

Growth	22.838	7.269	1.139	3.142	.035
Size	-15.865	8.388	-1.369	-1.892	.132
Average Payment Period	.102	.291	.219	.351	.743
a. Dependent Variable: Return on Assets					

Illustration: From the above table, it is revealed that there is 87.7% impact of Independent variable (i.e. Average Payment Period, Debt Ratio, Growth, Current Ratio, Size) on Dependent variable (i.e., Return on Assets). For testing the ANOVA, the P-value is taken into consideration. In the Model - 3 the P-value is .058 greater than the significance value of 0.05 henceforth the alternate hypothesis is not accepted. In the above model, t value for Average Payment Period is not significant at 5 percent level.

$$\text{Model 3 ROA} = \beta_0 + \beta_1 (\text{CR}_t) + \beta_2 (\text{DR}_t) + \beta_3 (\text{Growth}_t) + \beta_4 (\text{Size}_t) + \beta_5 (\text{IHP}_t) + e_t$$

$$\text{Hence, ROA} = 176.568 - 2.244 (\text{CR}_t) - 10.276 (\text{DR}_t) + 22.838 (\text{Growth}_t) - 15.865 (\text{Size}_t) + .102 (\text{APP}_t) + e_t$$

It has also been observed that Regression coefficient of Current Ratio, Debt Ratio, Size and Average Payment Period are statistically insignificant at 5% level of significance (Sig. > 0.05). Therefore, the Null Hypothesis H_{03c} is accepted.

Model Summary					
Model - 4	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.940 ^a	.883	.737	1.80498	
a. Predictors: (Constant), Cash Conversion Cycle, Debt Ratio, Current Ratio, Growth, Size					
ANOVA ^b					
Model - 4	Sum of Squares	df	Mean Square	F	Sig.
Regression	98.331	5	19.666	6.036	.053 ^a
Residual	13.032	4	3.258		
Total	111.362	9			
a. Predictors: (Constant), Cash Conversion Cycle, Debt Ratio, Current Ratio, Growth, Size					
b. Dependent Variable: Return on Assets					

Hypothesis - 4

Keeping in the view the objective of the study, the following hypotheses are formulated: 1. H_0 : Influence of Current Ratio on ROA is insignificant.

2. H_0 : Influence of Debt Ratio on ROA is insignificant.

3. H_0 : Influence of Growth on ROA is insignificant.

4. H_0 : Influence of Size (Total Assets) on ROA is insignificant.

5. H_0 : Influence of Cash Conversion Period on ROA is insignificant.

Model -4	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	173.180	48.353		3.582	.023
Current Ratio	-1.873	10.570	-.044	-.177	.868

Debt Ratio	-9.312	14.000	-.127	-.665	.542
Growth	20.520	5.178	1.023	3.963	.017
Size	-15.210	4.958	-1.312	-3.068	.037
Cash Conversion Cycle	-.124	.212	-.231	-.585	.590

a. Dependent Variable: Return on Assets

Illustration: From the above table, it is revealed that there is 88.3% impact of Independent variable (i.e. Cash Conversion Cycle, Debt Ratio, Current Ratio, Growth, Size) on Dependent variable (i.e., Return on Assets). For testing the ANOVA, the P-value is taken into consideration. In the Model - 3 the P-value is .053 greater than the significance value of 0.05 henceforth the alternate hypothesis is not accepted.

In the above model, t value for Cash Conversion Cycle is not significant at 5 percent level. $ROA = \beta_0 + \beta_1 (CR_t) + \beta_2 (DR_t) + \beta_3 (Growth_t) + \beta_4 (Size_t) + \beta_5 (CCC_t) + e_t$

Model 4 be $ROA = 173.180 - 1.873 (CR_t) - 9.312 (DR_t) - 20.520 (Growth_t) - 15.210 (Size_t) - .124 (CCC_t) + e_t$

However, the p value of Growth and size is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROA. Therefore, the p value of Growth only is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROA.

Model Summary					
Model - 5	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.997 ^a	.994	.974	.56227	
a. Predictors: (Constant), Average Payment Period, Debt Ratio, Growth, Current Ratio, Inventory Holding Period, Size , Average Collection Period					
ANOVA ^b					
Model -5	Sum of Squares	df	Mean Square	F	Sig.
Regression	110.730	7	15.819	50.035	.020 ^a
Residual	.632	2	.316		
Total	111.362	9			
a. Predictors: (Constant), Average Payment Period, Debt Ratio, Growth, Current Ratio, Inventory Holding Period, Size , Average Collection Period					
b. Dependent Variable: Return on Assets					
Coefficients ^a					
Model - 5	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	130.988	24.750		5.292	.034
Current Ratio	9.650	3.938	.227	2.451	.134
Debt Ratio	37.165	8.787	.505	4.229	.052
Growth	46.683	5.241	2.328	8.908	.012
Size	-18.158	2.748	-1.567	-6.607	.022
Inventory Holding Period	-.199	.096	-.226	-2.077	.173
Average Collection Period	1.503	.280	1.482	5.365	.033
Average Payment Period	.213	.090	.457	2.368	.141

Model Summary				
Model - 5	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.997 ^a	.994	.974	.56227
a. Dependent Variable: Return on Assets				

Illustration: From the above table, it is revealed that there is 99.4% impact of Independent variable (i.e. Average Payment Period, Debt Ratio, Growth, Current Ratio, Inventory Holding Period, Size, Average Collection Period) on Dependent variable (i.e., Return on Assets). For testing the ANOVA, the P-value is taken into consideration. In the Model - 5 ANOVA table shown above, it is found insignificant because p value is 0.02 which is lesser than 0.05.

Model 5 shows the beta coefficient of the independent variable and its significance.

In the above model, t value for Average Collection Period is highly significant at 1 percent level. The p value of Growth, ACP and Size is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROA. It indicates that with increasing level of Average Collection Period, ROA will be increased 5.365 levels.

On the other hand, Inventory Holding Period and Average Payment Period are not significant.

$$ROA = \beta_0 + \beta_1 (CR_t) + \beta_2 (DR_t) + \beta_3 (Growth_t) + \beta_4 (Size_t) + \beta_5 (IHP_t) + \beta_6 (ACP_t) + \beta_7 (APP_t) + e_t$$

$$ROA = 130.988 + 9.650(CR_t) + 37.165(DR_t) + 46.683(Growth_t) - 18.158 (Size_t) - .199(IHP_t) + 1.503(ACP_t) + .213 (APP_t) + e$$

Finding:

1. It has been observed from above mentioned model Growth, size and Average collection period play an important role for optimum ROA.
2. If ROA is increased 1% , Growth will be increased by 19% to 46% assuming that all the variables to be constant.
3. If there is increased 1 % ROA , Average Collection Period (ACP) will be increased by 1.5 % . There is direct relationship between ROA and ACP as per Model 1 & 5.
4. Model 5 revealed that 1 % ROA , Size of the Mahindra and Mahindra (Natural Logarithm of total Assets) decreased by 18.15 % . There is inverse relation between ROA and Size.

Conclusion:

1. The study shows, the financial performance of Mahindra and Mahindra Company is highly satisfactory.
2. To conclude, Mahindra and Mahindra Company has shown its effect on automobile industry.
3. It has been observed that the steady growth of the company due to strategic financial policy in the area of Sales as well as collection period.
4. Performance of Mahindra and Mahindra Company will be improved if company more focus on Sales Growth , Collection Period and less focus on expansions of Industry .
5. Focus on diversification of new products.
6. Looking at all the five years, 2022-23 is considered the best financial year out of all the ten years, as it has improved its profitability substantially in the year 2022-23.
7. If the company improves its revenue from sales and assets, it is expected that company will generate more profits ..

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