

**Analysis Of Profitability : A Comparative Study Of Maruti Suzuki,  
Tata Motors, Hindustan Motors And Mahindra And Mahindra****PANKAJ GROVER**

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**INTRODUCTION**

**P**rofit is the legitimate object of our society and prima facie object of every business. It is barometer of the success of business. Profit is the pivot around which revolve the various activities of business. In the opinion of R.E.V. Duck and F.R.J. Jervis, "Perhaps the most important reason for keeping accounts as far as management of the business is concerned that the information contained in them provides the means of measuring the progress of a business, of testing it's pulse and at indicating when and where remedial action, if necessary, shall be taken".

The survival of any business depends upon its earning capacity. Thus, if an enterprise fails to make profit, capital invested is eroded and if this situation prolongs, the enterprise ultimately ceases to exist. In fact, profit is the soul of business without which it is lifeless. Indeed, the efficiency of a business concern is measured by the amount of profits earned. The larger the profits the more efficient and profitable the business is demand to be. According to R. R. Gilchrist, the profit is the ultimate measure of effectiveness. A profitable company is likely to offer not only security of employment but also promotion prospects, job opportunities and the intense personnel motivation that comes from being associated with success.

Profitability means the profit earning ability of the enterprise and the capacity of management to generate surplus in the process of business operations. It is overall measure of efficiency. Profitability is distinguished from "profits". Profits refer to the absolute quantum of profits. Whereas the profitability refers to the ability to earn profits.

W. M. Harper remarks that profitability is a relative measure; it indicates the most profitability

alternative. Profit, on the other hand, is an absolute measure – it indicates the overall amount of profit earned by a transaction very high profit does not always indicate a sound – organizational efficiency and low profitability is not always a sign of organizational sickness.

In many a situation, it so happens that when a concern is implementing expansion plans, it may run into short term losses, therefore it can be said that profit is not the prime variable on which the operational efficiency and financial efficiency of an organization can be compared.

Profitability is required to judge the degree of operational efficiency of management, controlling operations and performance. It is also used to study "relative efficiency" with other firms.

An analysis of profitability reveals how the profit position stands as a result of total transactions made during the year, such analysis is particularly interesting to the suppliers of funds who can evaluate their investment and take decision accordingly. On the other hand, profit ratios are equally helpful to the management because these ratios reflect the efficiency of the enterprise as a whole. B.B. Howd and M. Upton observed that the word "profitability" may be defined as the ability of an investment to earn to return on its use. Thus profitability is the ability of an organization to earn profits. In other words, profitability is a composite concept relating the efficiency of an organization to earn profits.

**PRODUCTIVITY AND PROFITABILITY**

The performance of business firm can be evaluated or measured from a number of perspectives, and there are various quantitative as well as qualitative criteria that can be employed for this purpose. Productivity and profitability is the two separate devices for the measurement of overall efficiency of a business firm.

Productivity is defined as the ratio outputs to inputs, output in the form of products or services and input are the resources which are put in to convert into outputs. It is the quality or state of being productive. It is a concept that guides the management of production system and measures its success. It is the quality that indicates how efficiency the material, the labour, the capital and the energy can be utilized measurement and analysis of productivity can help to indentify area for corrective actions towards planning of business firm.

Capital and labour happen to be the two most important factor of production and the profitability of the business forms depends greatly on how efficiency and effectively it utilizes these two factors of Production. The productivity of capital can be measured by the ratio of output to capital employed. The higher the ratio greater would be the productivity of capital. If productivity of business firm increases the profitability will also increase. Thus profitability of the business firm largely depends on the productivity. Though both are different concepts of measuring the performance of business, their calculation is same base on the ratio. The calculation formulas are as under.

**Profitability = Operating Income / Operating Assets**

**Productivity = Output / Input**

Where operating income means, income from utilization of capital employed in the business firm and operating assets means capital employed. Chen and Mc Garrach pointed out that “with due allowance for temporary currency value fluctuations or changes in commodity or product price, there is strong positive co-relation among time series data measuring productivity, profitability and efficiency. Profit may be high or law due to change in selling price of commodities and services, inflationary effects, Governmental policy etc.

### **PROFITABILITY AND EFFICIENCY**

Profitability is also not synonymous with Efficiency thought it is an index of efficiency, it is regarded as a measure of efficiency and management guide to greater efficiency. No doubt profitability is an important yardstick of efficiency, but the extent of profitability cannot be taken as a final proof of efficiency. Some time satisfactory profits can make

inefficiency and conversely a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply revels a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of many factors on which profitability of an enterprise largely depends between cost and profitability. Moreover there are many other factors besides efficiency which affects the profitability.

### **IMPORTANCE OF PROFITABILITY**

Profit is a very good indicator of business performance, but the real standard of performance of a business firm cannot be judged by the absolute size of its periodic profit. For that profitability is a good device, which represent the earning of a business firm. Modern management is engaged in the task of maximizing the profit and wealth. The efficiency of management is measure by the profitability of the business; the greater is the profitability of the business, the more will be efficiency.

“An analysis of the profitability reveals as to haw the position of profit stands as a result of total transactions made during the year. It need not be stressed that profitability is analyzed through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share holders of business firm. The management of business firm has to take some crucial managerial decision like further expansion, rising of additional finance and problem of bonus and dividend payment etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover, management cans evaluate the operational efficiency of the business firm. The creditors of a business firm Are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share holders are equally interested in the profitability of the company. The share holders of a business form cannot be judged by absolute size of its periodic profit. For that profitability is a good device which represent the earning capacity of a business firm. Modern management is engaged in the task of maximizing the profits and wealth. The efficiency of management is measured by profitability of the business; the greater is the profitability reveals as to



how position of profit stands as a result of total transaction mode during the year. It need not be stressed that profitability is analyzed through the computation of profit ratios. Profitability of a business firm is very much helpful to the management, creditors and share-holders of business firm. The management of a business firm has to take same crucial managerial decision like further expansion, raising of a additional finance and problem of bonus and dividend payments etc. and for this purpose the management greatly rely-upon the profitability of the business firm. Moreover management can evaluate the operational efficiency of the business firm. The creditors of a business firm are also interested in the profitability of business firm. On the basis of profitability they decide their policy regarding the business firm. The share-holders are equally interested in the profitability of the company. The shareholders can take the decision whether to hold their equity share in the company or not, on the basis of profitability. Thus the management, creditors and owners of the company are equally interested in the profitability of the company.

#### **TECHNIQUES TO MEASURE PROFITABILITY**

The Measurement of profitability is as essential as the earning of profit itself for a business firm. The profitability of a business firm can be evaluated or measured from number of perspectives, and there is various quantitative as well as qualitative methods that can be employed for this purpose. The following major techniques may be used to measure profitability.

##### **Ratio Analysis**

“Ratio Analysis” is one of the prevalent and the most popular technique to measure the profitability of the business firm; it is used primarily to gain an insight into financial and operating aspects of a business firm. Ratio analysis is the process of determining and presenting in arithmetical terms the relationship between figures and group of figures drawn from financial statements. A ratio may be defined as “the indicated quotient of two mathematical expression” and as “the relationship between two or more things”. The term accounting ratio, is used to describe significant relationship

which exist between figures shown in financial statements profit & loss account and balance sheet.

The technique of ratio analysis involves four steps viz. determining the accounting ratio to be used comparison of ratio with the standard set and interpretation. An analyst has to determine which ratio is to be used, and then he computes it and compares it with the standards but no such standards have been setup by the Indian Industries till today. The interpretation of ratio requires careful & detailed study and sound judgment of the part of the analyst.

##### **Profitability Analysis of Car Industry**

The Profitability of Car Industry in India has been analyzed from the point of view of Financial Management and Shareholders. Profitability can be measured in terms of different components of profit and loss Account and balance sheet. A Financial Manager is very much interested to locate and pinpoint the causes which are responsible for low or high profitability. The financial manager should continuously evaluate the efficiency of its company in terms of profit. In analyzing the profitability of car industry in India from the point of view of financial management, following ratios are considered.

##### **(1) RATIO OF EARNING PER SHARE (E.P.S):-**

Apart from the rates of return, the profitability of a firm from the point of view of the ordinary shareholders is the Earning per Share. It measures the profit available to the equity shareholders on a per share basis, i.e. the amount that they can get on every share held. It is calculated by dividing the profits available to the shareholders by the number of the outstanding shares. The profits available to the ordinary shareholders are represented by net profits after taxes and preference dividend. The formula for derivation of this ratio is:

$$\text{Earnings per share} =$$

$$\frac{\text{Net Profit available to equity holders}}{\text{No. of Ordinary shares outstanding}}$$

$$\text{No. of Ordinary shares outstanding}$$

Earnings per Share are a widely used term. Its usefulness in analyzing the effect of a change in leverage on the net operating earnings to the ordinary shareholders and, given the requirements of maximizing Earning Per Share, what would be an appropriate capital structure for a firm is discussed in detail. Yet, Earning per Share as a measure of profitability of a firm from the owner's point of view should be used cautiously as it does not recognize the

effect of increase in equity capital as a result of retention of earnings. In other words, if Earning per Share has increased over the years, it does not necessarily follow that the firm's profitability has improved because the increased profits to the owner's may be the effect of an enlarged equity capital as a result of profit retentions, though the number of ordinary shares outstanding still remains constant. It only shows how much "theoretically" belongs to the ordinary shareholders.

Table – 1

**Earnings Per Share Ratio Of The Selected Car Industry Under The Study For The Period Of (2015-16 TO 2019-20)**

Year Com pany	20 15 16	20 16 17	20 17 18	20 18 19	20 19 20	Ave rage	Stan dard Devi ation	Co- effici ency of vari ance
Mar uti Suzu ki	43. 87	53. 69	55. 94	42. 81	83. 15	55.8 9	16.3 1	29.1 7
Tata Moto r	36. 57	43. 76	42. 91	17. 93	24. 91	33.2 2	11.3 9	34.2 9
Hind ustan Moto r	3.5	- 3.9 5	- 4.9 3	- 5.8 5	- 6.9 9	- 3.64	4.15	- 113. 85
Mahi ndra & Mahi ndra	26. 51	40. 38	37. 29	35. 41	36. 19	34.9 8	5.57	15.9 2
Aver age	27. 39	33. 47	32. 80	22. 58	34. 32	30.1 1	5.01	16.6 4

The above table No. 1 showed the ratio of EPS of Maruti – Suzuki Ltd. The ratio of EPS showed increased trend from 43.87 Rs In 2015-16 to 55.94 Rs. In 2017-18 than is the decline in 2018-19 and further increased in 2019-20. The average ratio of the company was 55.89 Rs which was above than the car industries. The ratio of EPS was satisfactory in the company. The Standard Deviation is 16.31 which are more than the average of industry it means there is a more fluctuating in the EPS of Maruti Suzuki.

The ratio of EPS of Tata Motor Ltd showed increased trend from initial stage (first two years) of the study period. Than decreased in the year 2017-18 and further decreased in 2018-19. The EPS in 2019-20 was Rs. 24.91. The average ratio of the company was Rs. 33.22. The standard deviation is 11.39 which is more than the average of industry.

The EPS ratio of Hindustan Motors Co showed decreasing trend during the study period. The average ratio was minus 3.64 Rs which shows unsatisfactory (negative) return.

The Ratio of EPS of M&M Co. showed increased trend from first two years of the study period, than decreased in 2017-18 and further decreased in 2018-19. The EPS in 2019-2020 was Rs. 36.91. The average ratio of the company was Rs 34.98. The standard deviation is 5.57 which is little more than the average of industry. The ratio of EPS was satisfactory in this company.

On the basis of the above analysis it can be seen that the EPS ratio of Maruti Suzuki Ltd was the highest followed by M&M Ltd, Tata Motors Ltd and Hindustan Motors Ltd.

#### ANOVA TEST OF EPS RATIO:

- \* Null Hypothesis: - There is no significant difference in EPS Ratio of selected car industries during the study period.
- \* Alternative hypothesis: - there is significant difference in EPS ratio of selected car industries during the study period.

Level of significance: - 5% level.

**Table – 2 Analysis Of Variance Test (Anova) On Earning Per Share Ratio Among The Groups Of Car – Industries.**

Anov a Sourc e of Varia tion	SS	df	MS	F	P- value	F crit
Betwe en Grou ps	401.6 376	4	100.4 094	0.142 619	0.963 514	3.055 568
Withi n Grou ps	10560 .56	15	704.0 4			
Total	10962	19				

### Earnings per share Ratio.

Calculated F Value: 0.142619

Table F Value: 3.055568

Result : Insignificant

The above analysis show that the table value of EPS is higher than that of calculated value of F. The calculated value of F was 0.142619 while the table value of F was 3.055568 at 5% of significance. The calculated value of F, being less than the table value of F. The null hypothesis is accepted and the alternative hypothesis got rejected at 5% level of significance. That means there is no significance difference in EPS ratio of selected car industries during the study period.

### (2) DIVIDENDS PER SHARE RATIO:-

The Earning per Share represents what the owner's are the critically entitled to receive from the firm. Apart from the net profit belonging to them is retained in the business and the balance is paid to them as dividend. The dividend paid to shareholders on a per share basis is the Dividends per Share Ratio. In other words, Dividends per Share Ratio is the net distributed profit belonging to the shareholders dividend by the number of ordinary shares outstanding. The formula for derivation of this ratio is:

#### Profits after interest and preference

#### Share Ratio =

$$\frac{\text{Dividend per Share}}{\text{Dividend paid to ordinary shareholders}} \times \text{No. of ordinary shares outstanding}$$

The shareholders have a definite preference for dividends relative to retention of earnings. The Dividends per Share Ratio would be a better indicator than EPS as the former shows that what exactly is received by the owners. Like the EPS, the Dividends per Share Ratio also should not be taken at its face value as the increased DPS may not be a reliable measure of the profitability as the equity based may have increased due to increased retention without any change in the number of outstanding shares.

Table – 3

Dividend Per Share Ratio Of The Selected Car Industry Under The Study For The Period Of (2015-16 To 2019-20)

Year	2015	2016	2017	2018	2019	Average	Standard Deviation	Co-efficient of variance
Company	15	16	17	18	19			
Maruti Suzuki	3.5	4.5	5	3.5	6	4.5	1.06	23.57
Tata Motor	13	15	15	6	15	12.8	3.90	30.46
Hindustan Motor	0	0	0	0	0	0	0.00	0.00
Mahindra & Mahindra	10	11.5	11.5	10	9.5	10.5	0.94	8.91
Average	6.63	7.75	7.88	4.88	7.63	6.95	1.26	18.15

#### Dividend per Share (DPS)

The Table No. 3 shows the ratio of dividend per share of Maruti Suzuki Ltd. The ratio of DPS showed increased trend from Rs 3.5 in 2015-16 to Rs, 5.00 in 2017-18 than decreased in 2018-19 and then further increased in 2019-20. The average ratio of the company was Rs 4.5 which were little bellow than the average ratio of the car industries. The standard deviation is 1.06 which is below than the average of industry. The ratio of DPS was satisfactory in this company.

The ratio of DPS of Tata motors co Ltd. Showed increased trend from first three years of the study period. Than decreased in 2018-19 and then further increased in 2019-20. The average ratio of the company was Rs. 12.8 which was above than the car industries. The Standard Deviation is 3.90 which are more than the average of industry. It means there is a more fluctuating in the DPS of Tata Motors Ltd.

The ratio of DPS of Hindustan motors Co ltd varied from zero rupees to zero rupees due to



negative earnings after tax. The company was not able to pay dividend to the share holders.

The ratio of DPS of M&M Company showed increased trend from Rs. 10.00 in 2015-16 to Rs 11.50 in 2017-18 than decreased in 2018-19 and further decreased in 2019-20. The average ratio of the company was Rs 10.50 which was above than the selected car industries of study period. The Standard Deviation is 0.94 which is below than the average of industry.

The DPS ratio in the car industry in the whole depicts an increasing trend during the study period except in 2018-19 year. The Hindustan motors company was not able to pay dividend to the shareholders due to negative earnings after tax.

#### ANOVA TEST OF DIVIDEND PAR SHARE (DPS) RATIO:

- \* Null Hypothesis: - There is no significant difference in DPS Ratio of selected car industries during the study period.
- \* Alternative hypothesis: - there is significant difference in DPS ratio of selected car industries during the study period.
- \* Level of significance: - 5 % level.

**Table – 4**

**Analysis Of Variance Test (Anova) On Dividend Per Share Ratio Among The Groups Of Car – Industries.**

Anova Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	25.46	4	6.3625	0.173839	0.948406	3.055568
Within Groups	549	15	36.6			
Total	574.45	19				

**Dividend per share Ratio (DPS)**

**Calculated F Value:** 0.173839

**Table F Value:** 3.055568

**Result :** Insignificant

The above table indicated the calculated value of F was 0.173839 while its table value was 3.055568, it means that the null hypothesis was accepted and alternative hypothesis was rejected at 5% level of significance. The calculated value of F being less than the table value of F that means there is no significant difference in DPS ratio of selected car industries.

#### (3) OPERATING MARGIN RATIO:-

This ratio indicates the relationship between operating profit and net sales in the form of percentage. Operating profit arrived at by adjusting all non-operating expenses and incomes in net profit in the other words we can say profit before depreciation and taxes. A consistently high ratio tells us the effective and efficient operation of the business. This ratio helps find out the profit arising out of pure production process i.e. the main business of production and sales. There by reflecting the effect of other incomes and expenses included in net profit.

$$\text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

**Operation profit = Sales-(Cost of goods sold + operational expenditure)**

**Table – 5**

**Operating Margin Ratio Of The Selected Car Industry Under The Study For The Period Of (2015-16 To 2019-20)**

Year Company	2015-16	2016-17	2017-18	2018-19	2019-20	Average	Standard Deviation	Co-efficient of variance
Maruti Suzuki	15.29	14.88	14.12	9.18	12.74	13.242	2.47	18.65
Tata Motor	10.68	9.7	10.53	6.71	11.4	9.804	1.83	18.69
Hindustan Motor	4.25	3.76	3.36	8.96	9.28	5.922	2.94	49.62
Mahindra	10.71	11.45	10.23	9.81	16.29	11.698	2.64	22.55

<b>&amp; Mahindra</b>								
<b>Average</b>	<b>8.11</b>	<b>8.07</b>	<b>7.88</b>	<b>4.19</b>	<b>7.79</b>	<b>7.21</b>	<b>1.69</b>	<b>23.50</b>

### OPERATING MARGIN RATIO

The operating ration of Maruti Suzuki Company shows the decreasing trend during the first four years of study period. The operating ratio of the company ranged from 9.18 percent in 2018-19 to 15.29 percent in 2015-16. The average operating ratio was 13.242%. The standard deviation is 2.47 which are more than the average of industry. The average operating ration of Maruti Suzuki Company was satisfactory.

The operating ratio of Tata Motors Company showed fluctuating trend during the study period. The average ratio was 9.804 percent the ratio decline from 10.68 percent in 2015-16 to 9.7 percent in 2016-17. The ratio rose to 10.53 percent in 2017-18 and sharply decline to 6.71 percent in 2018-19. The standard deviation is 1.83 which is little more than the average of industry. It can be said that the position of operating ratio was not good.

The operating ratio of Hindustan Motors Ltd was negative (minus) which not good sign for the management. Management has to think about this. The ratio was marking a decreasing trend, during the study period. The average ratio was -5.922 percent. The position of operating ratio was not good. The operating ratio of M&M Company shows upward trend for first two years of the study period than decreasing in 2017-18 and 2018-19, than sharply increasing 16.29 percent in 2019-20. The average ratio of the company was 11.69 percent, which was above than the car industries. The average operating ratio of M&M Company was good.

On the basis of the above analysis it can be seen that the operating ratio of Maruti Suzuki Ltd was the highest followed by Mahindra & Mahindra Ltd, Tata Motors Ltd and Hindustan Motors Ltd. Maruti Suzuki Ltd maintained the standard norms of ratio while other selected companies under the study did not hold a reasonable and satisfactory position of profitability.

### ANOVA TEST OF OPERATING MARGIN RATIO:-

- \* Null Hypothesis: - There is no significant difference in Operating Margin Ratio of selected car industries during the study period.
- \* Alternative hypothesis: - there is significant difference in Operation Margin Ratio of selected car industries during the study period.
- \* Level of significance: - 5 % level.

**Table – 6**

**Analysis Of Variance Test (Anova) On Dividend Per Share Ratio Among The Groups Of Car – Industries.**

<b>Anova Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
<b>Between Groups</b>	45.8497	4	11.47374	0.139601	0.964873	<b>3.055568</b>
<b>Within Groups</b>	1232.84	15	82.18934			
<b>Total</b>	<b>1278.735</b>	<b>19</b>				

### OPERATING MARGIN RATIO.

**Calculated F Value:** 0.139601

**Table F Value:** 3.05556

**Result :** Insignificant

The above table indicated the calculated value of F was 0.139601 while its table value was 3.055568 it means that the null hypothesis was accepted and alternative hypothesis was rejected at 5% level of significance. The calculated value of F, being less than the table value of F, It proves that the differences among the averages this car group were not much significant and the average profitability of the car groups do not differ much.

### (4) NET PROFIT MARGIN:-

The ratio is valuable for the purpose of ascertaining the over-all profitability of business and shows the efficiency of operating the business. It is the reverse of the operating Expense ratio. It is calculated as follows:

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

Generally, the ratio is computed on the basis of net profit earned from operation of business and non-operating expenses and incomes are excluded, e.g. income from investments of surplus funds of business is non-operating asset income and so it is to be excluded. Loss on sale of asset is non trading loss and it is not taken into account. Generally, tax is deducted from profit while calculating this ratio.

This ratio indicates what portion of sales revenue is left to the proprietors after all operating expenses are met. The higher the ratio the better will be the profitability. In order to have a better idea of profitability, the gross profit ratio and net profit ratio may be simultaneously considered. If the Gross Profit is increasing over last five years, but the net profit is declining, it indicates that administrative expenses are slowly rising.

This ratio indicates the net margin on sales after meeting all expense and making all provisions. Profitability ratios should also be studied over a period of time because the trend could be very significant. An increase in the ratio over the previous period reflects an improvement in the operational efficiency of the unit.

Different version of net profit margin is synonymous in different levels or stages of return which are as follows:

$$\text{Net Profit Margin} = \frac{\text{Net Profit before interest and tax}}{\text{Sales}} \times 100$$

$$\text{Net Profit Margin} = \frac{\text{Net Profit after interest and tax}}{\text{Sales}} \times 100$$

$$\text{Net Profit Margin} = \frac{\text{Net Profit before interest and after tax}}{\text{Sales}} \times 100$$

Table – 7  
Operating Margin Ratio Of The Selected Car Industry  
Under The Study For The Period Of (2015-16 To  
2019-20)

Year Com pany	20 15 16	20 16 17	20 17 18	20 18 19	20 19 20	Ave rage	Stan dard Devi ation	Co- effici ency of vari ance
Mar uti Suzu ki	9.5 3	10. 29	9.3 4	5.7 2	8.3 4	8.64 4	1.78	20.5 5
Tata Moto r	7.3 5	6.9 4	6.9 6	3.7 7	6.2 6	6.25 6	1.44	23.0 8
Hind ustan Moto r	- 9.5 5	1.9 8	4.3 4	- 6.1 6	- 8.2 7	- 3.53 2	6.28	- 177. 90
Mahi ndra & Mahi ndra	10. 28	10. 34	9.4 5	6.2 5	11. 08	9.48	1.90	20.0 0
Aver age	4.4 0	7.3 9	7.5 2	2.4 0	4.3 5	5.21	2.20	42.2 5

The above table shows the net profit ratio of Maruti Suzuki Co Ltd shows the fluctuating trend during the study period. The net profit ratio of the company ranged from 5.72 percent in 2018-19 to 10.29 percent in 2016-17. The average net profit ratio of Maruti Suzuki Company was 8.64 percent. The standard deviation is 1.78 which is lower than the average of industry. The ratio shows a better profitability position of the firm.

The net profit ratio of Tata Motors Co. showed declining trend during the study period except in 2019-20. The average ratio of the company was 6.25 percent which was above than the average of car Industry. The standard deviation is 1.44 which is lower than the average of industry. The ratio suggests a satisfactory position of the company.

In the Hindustan motors company net profit ratio ranged from minus 9.55 percent in 2015-16 to plus 4.34 percent in 2017-18. Ratio shows increasing trend during the first three years of study period than declined to minus 6.16 percent in 2018-19. The



average ratio was minus 3.532 percent which showed unsatisfactory return on net sale.

Net Profit ratio of M&M Company shows the fluctuation trend during the study period. The net profit ratio of the company ranged from 6.25 percent in 2018-19 to 11.08 percent in 2019-20. The average ratio of M&M company was 9.48 percent this ratio was satisfactory during the study period.

It was revealed from the above analysis that the net profit ratio of M&M company Ltd was the highest followed by Maruti Suzuki, Tata Motors and Hindustan Motors Ltd. It means that M&M, Maruti and Tata Motors Ltd were done good job and result to good maintain net profit margin while Hindustan Motors was not doing good.

#### **ANOVA TEST OF NET PROFIT MARGIN RATIO:-**

- \* Null Hypothesis: - There is no significant difference in Net Profit Margin Ratio of selected car industries during the study period.
- \* Alternative hypothesis: - there is significant difference in Net Profit Margin Ratio of selected car industries during the study period.
- \* Level of significance: - 5 % level.

**Table – 8**

#### **Analysis Of Variance Test (Anova) On Net Profit Margin Ratio Among The Groups Of Car – Industries.**

Anova Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	77.60292	4	19.40073	0.445404	0.774095	<b>3.055568</b>
Within Groups	653.3634	15	43.55756			
Total	<b>730.9663</b>	<b>19</b>				

#### **Profit Margin Ratio.**

**Calculated F Value** : 0.4454

**Table F Value** : 3.05556

**Result** : Insignificant

The above table indicated the calculated value of F was 0.4454 while its table value was 3.055568 it means that the null hypothesis was accepted and alternative hypothesis was rejected at 5% level of significance. On the basis of F value test, it indicated there was significant difference of the net profit margin among the selected car unit in India; it means that some car units were done good job and result to net profit margin. It indicated that selected car units were managed and controls the cost. So, there is a chance to improve the net profit margin in selected car units.

#### **(5) RETURN ON NET WORTH RATIO**

The Ratio of Return on owner's equity is a valuable measure for judging the profitability of an organization. This Ratio helps the shareholders of a company to know the return on investment in terms of profits. Shareholders are always interested in knowing as to what return they earned on their invested capital. Anthony and Reece opine that this ratio "reflects that how much the firm has earned on the funds invested by the shareholders (Either directly or through retained earnings).

They further point out that the ratio of return on owner's equity is most significant when the book value of the net worth is close to the market value of the stock since new capital is raised at market prices rather than at book value and firms are usually judged on their earnings performance relative to the market price of their stock.

This ratio is expressed in the percentage form of net profit earned to the owner's equity. The formula for the derivation of this ratio is:

$$\text{Return on Owner's Equity} = \frac{\text{Net Profit (After Int. \& Tax)}}{\text{Owner's Equity}} \times 100$$

In order to judge the efficiency with which the proprietors' Funds are employed in business, this ratio is ascertained. Proprietors' Equity or Proprietors' Funds include share capital and reserves. It is of great practical importance to the prospective investors, as it enables the profitability of a company to be compared with that of the other company. It also indicates whether the return on proprietors' funds is enough in relation to the risks that they undertake. This ratio Shows what amount of dividend is likely to be received on shares. Naturally

when return on shareholders' funds is to be calculated, the profit should be after interest and tax (PAT).

**Table – 9**

**Return On Net Worth Ratio Of The Selected Car Industry Under The Study For The Period Of (2015-16 To 2019-20)**

Year Com pany	20 15 - 16	20 16 - 17	20 17 - 18	20 18- 19	20 19- 20	Ave rag e	Stan dard Devi atio n	Co- effici ency of vari ance
<b>Mar uti Suzu ki</b>	23 .2 4	22 .6 3	19 .2	13. 23	20. 29	19.7 2	3.99	<b>20.2 2</b>
<b>Tata Moto r</b>	24 .7 7	24 .6 7	21 .1 8	7.4 5	9.6 1	17.5 4	8.38	<b>47.7 9</b>
<b>Hind ustan Moto r</b>	- 74 .5	- 69 .7 4	- 70 .3 2	- 13 3.8 5	- 34 8.1 3	- 139. 31	2.60	<b>1.86</b>
<b>Mahi ndra &amp; Mahi ndra</b>	20 .7 7	27 .2 8	20 .6 1	18. 49	26. 23	22.6 8	3.85	<b>16.9 7</b>
<b>Aver age</b>	- 1. 43	1. 21	- 2. 33	13. 06	18. 71	19.9 8	9.47	<b>47.4 0</b>

#### RETURN ON NET WORTH RATIO:-

The above table shows ratio of return on net worth of Maruti Suzuki Company. The ratio showed a declining trend during the first four year of study period. The ratio was satisfactory in the base year of the study period but then it declined due to decrease in PAT (profit after tax) and increase in interest charges. The ratio rose from 13.23 percent in 2018-19 to 20.29 percent in 2019-20. The standard deviation is 3.99 which is lower than the average of industry. It means there is a more fluctuating in the return on net worth of Maruti Suzuki Ltd. But at the end the average ratio was satisfactory.

The ratio of return on net worth of Tata Motor Ltd was also showed a declining trend during the first four years of the study period than in the last year of the study period ratio slightly increased. The average ratio of the company was 17.54 percent was satisfactory.

The ratio of return on net worth of Hindustan Motor Ltd was negative through out of the study period which not good sign for the management has to think about this. The ratio of return on net worth of M&M Co. was showing mixed trend during the study period. It shows upward trend for the first two years and then down trend and further upward trend at the last year of study period. The average ratio of M&M Company was 22.68 percent which was the highest than the average ratio of the car industry.

On the basis of the above analysis it can be seen that the return on net worth ratio of M&M Company was the highest average followed by Maruti Suzuki, Tata Motors and Hindustan Motors Ltd. The ratio of Hindustan Motors Ltd has shown negative trend during the study period which was not acceptable. All over the M&M and Maruti Suzuki Company has performed well in earning on net worth except Tata motors and Hindustan Motors Ltd.

#### ANOVA TEST OF RETURN ON NET WORTH:

- \* Null Hypothesis: - There is no significant difference in return on Net worth ratio of selected car industries during the study period.
- \* Alternative hypothesis: - there is significant difference in return on net worth Ratio of selected car industries during the study period.
- \* Level of significance: - 5 % level.

**Table – 10**

**Analysis Of Variance Test (Anova) On Net Profit Margin Ratio Among The Groups Of Car – Industries.**

Anova Source of Variati on	SS	d f	MS	F	P- valu e	F crit
<b>Between Groups</b>	15716. 79	4	3929. 19	0.42 9	0.78 5	<b>3.0555 68</b>
<b>Within Groups</b>	137332 .7	1 5	9155. 51			
<b>Total</b>	<b>153049 .5</b>	<b>1 9</b>				

**Return on net worth : [Net worth related profitability]**

**Calculated F Value : 0.429**

**Table F Value : 3.05568**

**Result : Insignificant**

The analysis showed the insignificant result. It can be seen from the table, that the calculated value of F was 0.429 while the table value of F was 3.055568, at 5% level of significance. The calculated value of F, being less than the table value of F, the null Hypothesis stood accepted and the alternative Hypothesis got rejected at 5% level of significance. So it proves that the differences among the average of this group were not much significant and the average profitability of the groups of the car industries does not differ much.

#### (6) RETURN ON LONG TERM FUND RATIO:-

The ROEC is the second type of ROI. It is similar to the ROA except in one respect. Here the profits are related to the total capital employed. The term capital employed refers to long term funds supplied by the lenders and owners of the firm. It can be computed in two ways. First, it is equal to noncurrent liabilities (Long terms liabilities) Plus owner's equity. Alternatively, it is equivalent to net working capital plus fixed assets. Second, it is equal to long term funds minus investments made outside the firm. Thus the capital employed basis provides a test of profitability related to the sources of the long term funds. A comparison of this ratio with similar firms, with the industry average and over time would provide sufficient insight in to how efficiently the long term funds of owners and lenders are being used. The higher the ratio, the more efficient is the use of capital employed. The ratio is more appropriate for evaluating the efficiency of internal management. A high ratio is a test of better performance and low ratio is an indication of poor performance.

The formula for derivation of this ratio is:-  
Operating profit before

Return on net capital employed =

$$\frac{\text{Interest and tax}}{\text{Net Capital employed}} \times 100$$

**Table – 11**

#### **Return On Long Turn Ratio Of The Selected Car Industry Under The Study For The Period Of (2015-16 To 2019-20)**

Year Com pany	20 15 - 16	20 16 - 17	20 17 - 18	20 18 - 19	20 19 - 20	Ave rage	Stan dard Devi ation	Co- effici ency of vari ance
<b>Mar uti Suzu ki</b>	33. 47	30. 74	27. 35	17. 48	28. 8	27.5 68	6.09	<b>22.0 8</b>
<b>Tata Moto r</b>	28. 65	31. 18	22. 85	8.8 9	12. 26	20.7 66	9.85	<b>47.4 5</b>
<b>Hind ustan Moto r</b>	- 19. 46	- 21. 19	- 19. 26	- 47. 59	- 75. 88	- 36.6 76	24.9 8	<b>- 68.1 0</b>
<b>Mahi ndra &amp; Mahi ndra</b>	23. 17	26. 09	19. 64	14. 51	27. 73	22.2 28	5.30	<b>23.8 4</b>
<b>Aver age</b>	<b>16. 46</b>	<b>16. 71</b>	<b>12. 65</b>	<b>- 1.6 8</b>	<b>- 1.7 7</b>	<b>8.47</b>	<b>9.45</b>	<b>111. 51</b>

#### **Return on Long term fund Ratio:-**

Table shows ratio of return on long term fund on Maruti Suzuki company ratio showed declining trend during the study period, except in 2019-2020. The average ratio of the company was 27.568 percent which was the above than the average of selected car industry. The standard deviation is 6.09 which is lower than the average of industry. The ratio suggests a satisfactory position of the company.

The ratio of return on long term fund of Tata Motor Ltd shows fluctuating trend during the study period. Ratio ranged up to 8.89 percent in 2018-19 to 33.47 percent in 2015-16. The average ratio of the company was 20.766 percent. The standard deviation is 9.85 which are more than the average of industry. The ratio was satisfactory during the study period.

The ration of return of long term fund of the Hindustan Motors Ltd showed fluctuating trend during the study period. The average ratio was minus 36.676 percent, which showed unsatisfactory return on long term fund.

The ratio return on long term fund of M&M Co, shows the increasing trend during first two years



of study period. The long term fund ratio of M&M Company ranged from 14.51 percent in 2018-19 to 26.09 percent in 2016-17. The average return on long term fund ratio was 22.22 percent. The ratio was satisfactory during the study period.

It was revealed from the above analysis that the return on long term fund ratio of Maruti Suzuki Ltd Company was the highest during study period among selected companies. Maruti Suzuki, M&M and Tata Motor has maintain good position in business is to obtain satisfactory return on capital employed. The average ratio of Hindustan Motors Ltd was minus 36.676 percent which shows unsatisfactory return. All Company shows the good efficiency of business as whole except Hindustan Motors.

#### ANOVA TEST OF RETURN ON LONG TERM FUND RATIO:-

- \* Null Hypothesis: - There is no significant difference in Return on Long term fund ratio of selected car industries during the study period.
- \* Alternative hypothesis: - there is significant difference in return on long term fund ration of selected car industries during the study period.
- \* Level of significance: - 5 % level

Table – 12

#### Analysis Of Variance Test (Anova) On Return on Long Term Fund Ratio Among The Groups Of Car – Industries.

Anova Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	15716.79	4	3929.19	0.429	0.785	3.055568
Within Groups	137332.7	15	9155.51			
Total	153049.5	19				

#### Return on long term fund:

Calculated F Value : 0.346898

Table F Value : 3.05568

Result : Insignificant

The analysis showed the insignificant result. It can be seen from the table, that the calculated value of F was found as 3.346898, while the table value of F was 3.055568, at 5% level of significance. The calculated value of F, being less than the table value of F, the null Hypothesis stood accepted and the alternative Hypothesis got rejected at 5% level of significance.

#### CONCLUSION

On the basis of the above analysis it can be seen that the EPS ratio of Maruti Suzuki Ltd was the highest followed by M&M Ltd, Tata Motors Ltd and Hindustan Motors Ltd. Moreover Earning per Share Hindustan motors ltd. is in minus it means that EPS shows negative return.

The DPS ratio in the car industry in the whole depicts an increasing trend during the study period except in 2018-19 year. The Hindustan motors company was not able to pay dividend to the shareholders due to negative earnings after tax. On the basis of the above analysis it can be seen that the operating ratio of Maruti Suzuki Ltd was the highest followed by Mahindra & Mahindra Ltd, Tata Motors Ltd and Hindustan Motors Ltd. Maruti Suzuki Ltd maintained the standard norms of ratio while other selected companies under the study did not hold a reasonable and satisfactory position of profitability.

It was revealed from the above analysis that the net profit ratio of M&M company Ltd was the highest followed by Maruti Suzuki, Tata Motors and Hindustan Motors Ltd. It means that M&M, Maruti and Tata Motors Ltd were done good job and result to good maintain net profit margin while Hindustan Motors was not doing good.

On the basis of the above analysis it can be seen that the return on net worth ratio of M&M Company was the highest average followed by Maruti Suzuki, Tata Motors and Hindustan Motors Ltd. The ratio of Hindustan Motors Ltd has shown negative trend during the study period which was not acceptable. All over the M&M and Maruti Suzuki Company has performed well in earning on net worth except Tata motors and Hindustan Motors Ltd.

It was revealed from the above analysis that the return on long term fund ratio of Maruti Suzuki Ltd Company was the highest during study period among selected companies. Maruti Suzuki, M&M

and Tata Motor have maintained good position in business is to obtain satisfactory return on capital employed. The average ratio of Hindustan Motors Ltd was minus 36.676 percent which shows unsatisfactory return. All Company shows the good efficiency of business as whole except Hindustan Motors.

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