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SHAREHOLDER RETURNS AND CORPORATE FINANCIALS: A CROSS-SECTIONAL STUDY OF INDIAN AUTO INDUSTRY



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ABSTRACT:

This paper aims to determine the factors influencing the shareholder value, measured in terms of return on equity and also investigate the impact of different factors on the ROE. Various factors considered are operating profits, asset turnover, leverage, tax rate and interest rate. The factors are identified on the basis of DuPont model suggestion, with addition of tax and interest rates. The same is tested on a cross-sectional basis (for the FY 2014-15) across 30 companies constituting the Indian Auto Industry. The results revealed that, asset turnover and effective tax rate are two major factors positively influencing the ROE of Indian auto industry, whereas, debt and effective rate of interest are two factors negatively impacting the ROE.

KEYWORDS: shareholder's wealth , major objectives , Shareholder Returns , Indian Auto Industry.

INTRODUCTION:

Maximizing the shareholder's wealth has become one of the major objectives of the companies today. It is said that maximizing the shareholder's wealth is equivalent to maximizing the value of the firm. Maximizing the wealth of shareholders constitutes the principal guarantee for efficient allocation of resources in the economy and hence it is to be regarded as the normative goal from the financial point of view. Also, if any conflicts arising should be resolved in favor of shareholders to enhance the long term viability and competitiveness of the firm. Return on Equity (ROE) is one key component to maximize the wealth of the shareholders. ROE indicates how profitable a company is by comparing its net income to its average shareholders' equity. It measures how much a shareholder has earned for his investment in the company. The higher the ratio percentage, the more efficient management is in utilizing its equity base and evidences that the firm is generating value to shareholders. ROE is one very important measure which checks the wealth maximization of the shareholders. It is an important measure of a company's earnings performance. The ROE tells common shareholders how effectively their money is being employed. Financial analysts consider return on equity ratios in the 15-20% range as representing attractive levels of investment quality. ROE is computed by dividing the earnings after taxes available to equity shareholders by the shareholders' funds.

The Indian Auto Industry includes companies manufacturing two wheelers, three wheelers, passenger cars, commercial vehicles and companies manufacturing auto ancillaries. The Indian Auto Industry is one of the most rapidly growing sectors of the Indian Economy and also one of the largest automotive markets in the world. It has been attracting the retail investments in India in modern days. The majority of Indian automobile industry is evenly divided into three "clusters" namely, Chennai, Mumbai and the Northern cluster is around the National Capital Region (NCR). An emerging cluster is the state of Gujrat, with many manufacturing units coming up. India's automobile exports are growing consistently with the United Kingdom being India's largest export market, followed by Italy, Germany, Netherlands, and South Africa.

LITERATURE REVIEW

The existing study in the area of shareholder value drivers in the corporate finance area is heterogeneously scoped. There are researches that have argued and proven with evidence that shareholder value depends on the intrinsic value of a company, which in turn, is driven by sales growth rate, operating profit margin, incremental capital investment, income tax and cost of capital. (Rappaport, 1998). Such value drivers are classified as internal and external drivers to understand the impact of those that could be controlled by the management and those that are beyond the control (Chari & Mohanty, 2007). As per Institute of Management Accountants, managerial decisions of intangible, operating, investment and financial nature create the value drivers – (i) Amount of Growth Rate, Duration (ii) Sales Growth, Profit Margin, Income Tax Rate (iii) Working Capital and Fixed Capital and (iv) Capital Structure – these in turn create valuation components – cash flow from operations and cost of capital (Institute of Management Accountants, 1997). In his working paper, Pandey (2015) has measured the influence of control variables – Size, Business Risk, Leverage, Free Cash Flows Ratio and Capital Intensity (FA/TA) on the shareholder value (Pandey, 2005). He found that all, except size, had positive relationship with the value. It was also established in the Indian Steel sector that capital structure, profitability and asset utilization efficiency are key drivers of return on equity and external factors like tax burden and interest expenses do not impact the same (Ramudu, Parasuraman, & Nusrathunnisa, 2012). Overall, it could be observed that there is a general consensus among researchers on certain parameters that drive the shareholders' value.

OBJECTIVES OF THE STUDY:

As the purpose of this study is to determine the financial value drivers that are driving the shareholders' wealth, the objective of this study is:

- Determining the factors influencing the ROE of Indian Auto Industry
- Measuring the impact of above factors on the ROE of Indian Auto Industry

RESEARCH METHODOLOGY

Keeping in mind the above objectives, the study follows the below research methodology:

Research Type

This is a descriptive study. The study uses analysis of financial numbers like profitability data, equity holdings and so on, hence, this can be categorized as an analytical study. At the same time the study is conducted on a specific sector to narrow down the insights, hence, can be considered a case study also.

Sample

Top 30 Indian auto sector companies on the basis of their respective free float market capitalization as on 28-Jan-2016 (www.nseindia.com) are selected. Hence, the sample selection technique can be said to be Judgmental Sampling. The list of these companies is presented in below Table 1:

<i>Serial Number</i>	<i>Company</i>	<i>Market Capitalization as on 28th Jan 2016 (Rs. Crores)</i>
1.	Maruti Suzuki India Ltd.	1,23,952.51
2.	TATA Motors	1,13,483.64
3.	Mahindra & Mahindra	74,788.84
4.	Bajaj Auto	65,495.33
5.	BOSCH	53,240.13
6.	Hero Moto Cop,	48,715.76
7.	Eicher Motors	43,316.39
8.	Motherson Sumi Systems Ltd	34,037.68
9.	Ashok Leyland	25,086.40
10.	Bharat Forge	19,116.99
11.	MRF	15,154.86
12.	Amara Raja Batteries	13,947.69
13.	TVS	13,863.04
14.	Wabco India	10,108.77
15.	Exide Industries	10,055.50
16.	Apollo Tyres	7,480.12
17.	HMT	5,237.80
18.	Sundaram Clayton	4,030.43
19.	Force Motors	3,566.16
20.	JMT Auto	1982.58
21.	Minda Corp.	1943.46
22.	Suprajit Engineering	1715.09
23.	Federal MogulGoetze	1665.63
24.	ESCORTS	1,609.43
25.	Mah. Scooters	1,371.54
26.	SML Isuzu	1,352.23
27.	Gabriel India	1,235.34
28.	VST Tillers	1,208.37
29.	WHEELS	1,176.64
30.	ZS Steering Gear	1,154.12

Variables

As the objective is to study the impact of certain financial parameters on the ROE of firms, ROE of selected Indian Auto Industry firms will be the dependent variable. It was also identified through literature that below variables can possibly have influence on the ROE of these firms: Operating Profit, Asset Turnover, Capital Structure, Tax Burden and Interest Burden.

The above is based on the DuPont framework recommended by DuPont Corporation in the 1920s (Investopedia). According to the same ROE is affected by three things:

- ✓ Operating efficiency, which is measured by profit margin
- ✓ Asset use efficiency, which is measured by total asset turnover
- ✓ Financial leverage, which is measured by the equity multiplier

In addition to the above, we have also studied the impact of two more variables – Effective Interest Rate and Effective Tax Rate (Ramudu, Parasuraman, & Nusrathunnisa, 2012).

Hence, the independent variables for the study would be – Operating Profit (EBIT/S), Asset Turnover Ratio (S/TA), Leverage (D/TA), Tax Rate (Tax Expenses/EBT), Interest Rate (Finance Costs/EBIT)

Hypotheses

To achieve the objective of we frame the below (alternate) hypotheses:

H₁: ROE of Indian Auto Industry significantly depends on operating profit, asset turnover, debt level, effective tax rate and effective interest rate

H₂: ROE of Indian Auto Industry significantly depends on operating profit

H₃: ROE of Indian Auto Industry significantly depends on asset turnover

H₄: ROE of Indian Auto Industry significantly depends on capital structure

H₅: ROE of Indian Auto Industry significantly depends on effective tax rate

H₆: ROE of Indian Auto Industry significantly depends on effective interest rate

MODEL DEVELOPMENT

The above hypotheses are tested using the below regression models have been developed and tested:

$$\text{Model - 1: } ROE = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

(Null Hypothesis Tested: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$)

$$\text{Model - 2: } ROE = \alpha + \beta_1 X_1 + \varepsilon$$

(Null Hypothesis Tested: $\beta_1 = 0$)

$$\text{Model - 3: } ROE = \alpha + \beta_2 X_2 + \varepsilon$$

(Null Hypothesis Tested: $\beta_2 = 0$)

$$\text{Model - 4: } ROE = \alpha + \beta_3 X_3 + \varepsilon$$

(Null Hypothesis Tested: $\beta_3 = 0$)

$$\text{Model - 5: } ROE = \alpha + \beta_4 X_4 + \varepsilon$$

(Null Hypothesis Tested: $\beta_4 = 0$)

$$\text{Model - 6: } ROE = \alpha + \beta_5 X_5 + \varepsilon$$

(Null Hypothesis Tested: $\beta_5 = 0$)

Where,

ROE = Dependent Variable – ‘Return on Equity’ (EAT / Net Worth)

a = Constant term in the regression model

β_1 = beta coefficient of variable X1

β_2 = beta coefficient of variable X2

β_3 = beta coefficient of variable X3

β_4 = beta coefficient of variable X4

β_5 = beta coefficient of variable X5

X_1 = Independent Variable ‘Operating Profit’ (EBIT / Sales)

X_2 = Independent Variable ‘Asset Turnover’ (Sales / Total Assets)

X_3 = Independent Variable ‘Capital Structure’ (Long term Debt / Net Worth)

X_4 = Independent Variable ‘Effective Tax Rate’ (Tax Expenses / EBT)

X_5 = Independent Variable ‘Effective Interest Rate’ (Finance Costs / Interest Bearing Borrowings)

e= Error Term of Regression Model

Data

The data collected are secondary in nature, which were financial numbers extracted from the annual reports and financial statements of companies published in their respective websites. For the purposes of regression analysis we have converted the financial numbers into their respective logarithmic values (with exponential values for negative numerals).

Period of Study

This study is cross-sectional in nature. Hence, all the financial data used for the study pertain to financial year ended on March-31-2015 across selected 30 companies.

Statistical Tools for Analysis

The models are tested and interpretations are drawn using the below statistical tests:

- ✓ Multiple R (Correlation Coefficient) - A correlation is a single number that describes the degree of relationship between two variables. It refers to any of a broad class of statistical relationships involving dependence.
- ✓ R^2 (Coefficient of Determination) - The coefficient of determination is a key output of regression analysis. It is interpreted as the proportion of the variance in the dependent variable that is predictable from the independent variable or a set of independent variables.
- ✓ β (Coefficient of Regression) - A result of Multiple Regression, β denotes the extent of change brought in by the independent variable/s to the dependent variable.
- ✓ F Statistic (ANOVA) – F-statistic is used to decide whether the model being tested as a whole has statistically significant predictive capability. This is used to determine the fitness of the model.
- ✓ P-Value (t-Test) - The P-Values for each of the β coefficient tests for the hypotheses (with null hypothesis " $\beta=0$ "). If any of the independent variable in the model tested has insignificant P-Value, we infer that it does not have predictive capability in the presence of the others.

The statistical analysis is conducted using Data Analysis Toolpack of MS-Excel 2016.
Data Analysis, Results & Interpretations

The data analysis is carried out using MS-Excel Analysis tool pack and the results are presented below:
Testing of Model-1

Model – 1: $ROE = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$

Results:

<i>Statistic</i>	<i>Value</i>	<i>Interpretation</i>
Multiple – R	0.85	The degree of association between ROE of Auto Industry Companies and the tested factors is found to be highly positively correlated
R-Squared	0.72	The tested factors explain almost 72% of the variations in the ROE of Indian Auto Industry Companies
ANOVA F-Statistic	0.000*	The P-Value for the F-Test is 0.000. Hence, we reject the null hypothesis $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ and infer that the model is fit in its predicting ability and R ² value is statistically significant
Beta for OPM (P-Value)	0.038 (<0.05)	The Operating Profit Margin has positive impact on ROE . p-value of 0.003 is less than critical value 0.05 (at 95% confidence level), hence reject the null hypothesis and infer that the above results are statistically significant .
Beta for ATR (P-Value)	0.033 (<0.05)	The Asset Turnover Ratio has positive impact on ROE . p-value of 0.049 is less than critical value 0.05 (at 95% confidence level), hence reject the null hypothesis and infer that the above results are statistically significant .
Beta for LEV (P-Value)	-0.102 (>0.05)	The Debt to Asset Ratio has negative impact on ROE . p-value of 0.277 is more than critical value 0.05 (at 95% confidence level), hence we fail to reject the null hypothesis and infer that the above results are statistically not significant .
Beta for Tax (P-Value)	0.430 (<0.05)	The Effective Tax Rate has positive impact on ROE . p-value of 0.007 is less than critical value 0.05 (at 95% confidence level), hence we reject the null hypothesis and infer that the above results are statistically significant .
Beta for INT (P-Value)	-0.033 (>0.05)	The Effective Interest Rate has negative impact on ROE . p-value of 0.058 is more than critical value 0.05 (at 95% confidence level), hence we fail to reject the null hypothesis and infer that the above results are statistically not significant .

Model – 2: $ROE = \alpha + \beta_1 X_1 + \varepsilon$

RESULTS:

<i>Statistic</i>	<i>Value</i>	<i>Interpretation</i>
Multiple - R	0.18	The degree of association between ROE of Auto Industry Companies and the tested factors is found to be highly positively correlated
R-Squared	0.03	The tested factors explain only 3% of the variations in the ROE of Indian Auto Industry Companies
ANOVA F-Statistic	0.35	The P-Value for the F-Test is 0.35. Hence, we fail reject the null hypothesis $\beta_1=0$ and infer that the model is not fit in its predicting ability and R ² value is statistically insignificant .
Beta for OPM (Sig.)	0.015 (>0.05)	The Operating Profit Margin has positive impact on ROE . p-value of 0.35 is more than critical value 0.05 (at 95% confidence level), hence we fail to reject the null hypothesis and infer that the above results are statistically insignificant .

Model – 3: $ROE = \alpha + \beta_2 X_2 + \varepsilon$

Results:

<i>Statistic</i>	<i>Value</i>	<i>Interpretation</i>
Multiple-R	0.39	The degree of association between ROE of Auto Industry Companies and the tested factors is found to be highly <i>positively correlated</i>
R-Squared	0.15	The tested factors explain almost 15% of the variations in the ROE of Indian Auto Industry Companies
ANOVA F-Statistic	0.03	The P-Value for the F-Test is 0.03. Hence, we reject the null hypothesis $\beta_2=0$ and infer that the model is fit in its predicting ability and R^2 value is statistically significant .
Beta for ATR (Sig.)	0.05 (<0.05)	The Asset Turnover Ratio has positive impact on ROE . p-value of 0.03 is less than critical value 0.05 (at 95% confidence level), hence reject the null hypothesis and infer that the above results are statistically significant .

Model – 4: $ROE = \alpha + \beta_3 X_3 + \varepsilon$

Results:

<i>Statistic</i>	<i>Value</i>	<i>Interpretation</i>
Multiple-R	0.46	The degree of association between ROE of Auto Industry Companies and the tested factors is found to be highly <i>positively correlated</i>
R-Squared	0.21	The tested factors explain almost 21% of the variations in the ROE of Indian Auto Industry Companies
ANOVA F-Statistic	0.009	The P-Value for the F-Test is 0.009. Hence, we reject the null hypothesis $\beta_3=0$ and infer that the model is fit in its predicting ability and R^2 value is statistically significant .
Beta for LEV (Sig.)	-0.33 (<0.05)	The Debt to Asset Ratio has negative impact on ROE . p-value of 0.009 is less than critical value 0.05 (at 95% confidence level), hence reject the null hypothesis and infer that the above results are statistically significant .

Model – 5: $ROE = \alpha + \beta_4 X_4 + \varepsilon$

Results:

<i>Statistic</i>	<i>Value</i>	<i>Interpretation</i>
Multiple-R	0.58	The degree of association between ROE of Auto Industry Companies and the tested factors is found to be highly <i>positively correlated</i>
R-Squared	0.33	The tested factors explain almost 33% of the variations in the ROE of Indian Auto Industry Companies
ANOVA F-Statistic	0.0008	The P-Value for the F-Test is 0.0008. Hence, we reject the null hypothesis $\beta_4=0$ and infer that the model is fit in its predicting ability and R^2 value is statistically significant .
Beta for TAX (Sign.)	0.52 (<0.05)	The Effective Tax Rate has positive impact on ROE . p-value of 0.008 is less than critical value 0.05 (at 95% confidence level), hence we reject the null hypothesis and infer that the above results are statistically significant .

Model-6: ROE = $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$

Results:

<i>Statistic</i>	<i>Value</i>	<i>Interpretation</i>
Multiple-R	0.68	The degree of association between ROE of Auto Industry Companies and the tested factors is found to be highly positively correlated
R-Squared	0.46	The tested factors explain almost 46% of the variations in the ROE of Indian Auto Industry Companies
ANOVA F-Statistic	0.000	The P-Value for the F-Test is 0.000. Hence, we reject the null hypothesis $\beta_5=0$ and infer that the model is fit in its predicting ability and R ² value is statistically significant .
Beta for INT (Sign.)	-0.074 (<0.05)	The Effective Interest Rate has negative impact on ROE . p-value of 0.000 is less than critical value 0.05 (at 95% confidence level), hence reject the null hypothesis and infer that the above results are statistically significant .

FINDINGS & INTERPRETATIONS

Based on the testing of various regression models and the output presented above we could infer the below:

- ✓ Significant factors influencing ROE of Indian Auto Industry firms out of the selected factors – Asset Turnover, Debt in Capital Structure, Effective Interest Rate and Effective Tax Rate
- ✓ Operating Profit Margin is found to be having insignificant impact on the ROE of Indian Auto Firms
- ✓ Asset Utilization Efficiency of firms as represented by Total Assets Turnover Ratio is positively influencing the ROE of firms.
- ✓ Effective Tax Rate also found to have significantly positive influence on the ROE of the firm. While it must be said that the higher tax rate results in an reduction in Earnings after Taxes, which is the numerator in ROE computation (bringing down the ROE), the causing effect for such higher tax might be the lower debt (and therefore interest expenses) that increases the denominator in ROE computation – i.e, the net worth or equity.
- ✓ The proportion of debt in capital structure, as represented by Debt-Assets ratio of Indian Auto companies, is found to have negative impact on the ROE.
- ✓ The effective rate of finance costs of the company is also found to have negative impact on the ROE.
- ✓ In summary we can infer that, asset turnover and effective tax rate have positive impact, whereas debt in capital structure and rate of financing debt have negative impact on ROE.

CONCLUSION

If Indian Auto Firms maintain a low debt-equity ratio and lower financing rates, they are most likely to expect a higher ROE generation resulting in higher shareholder value creation. Similarly, if these firms utilize their total assets more efficiently, the likelihood of generating a higher ROE is also higher for the firm. It must be noticed here that the results of regression show that higher tax rate that a company ends up paying, higher are its chances of generating higher Return on Equity, but, this contradicts the rational possibility that ROE should be negatively influenced by tax burden. Possible explanations for the same can be that the external influences on tax rate as well as tax planning

efficiency of the firm may be influencing its ROE. It can also be said that as per DuPont, if ROE of the firms has been affected primarily by tax rules in the country, the management of the firms may not be responsible for either increasing or decreasing ROE as it is beyond their control (Ramudu, Parasuraman, & Nusrathunnisa, 2012).

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