

IMPACT OF FINANCIAL LEVERAGE ON THE FINANCIAL PERFORMANCE OF SELECTED AUTOMOBILE COMPANIES

Juhi Ahuja¹
Anmol Gupta²

ABSTRACT

This study investigated the effect of financial leverage measures on firm's performance. The study was carried out on top five listed companies in 2018 taken from different segments of automobile sector in India for a period of five years from 2014 to 2018. This work employed three financial leverage for the independent variables such as: Debt Ratio (DR), Debt Equity Ratio (DER), Interest Coverage Ratio (ICR) in determining the effect of financial leverage on Return on Assets (ROA) as dependent variable. The empirical results revealed that financial leverage has positive effect on profitability and efficiency. This is also highlighted that Management should ensure of financial decisions taken are in consonance with the shareholders' wealth maximization objectives which encompass the profit maximization objective of the firms.

Keywords: Financial Leverage, Debt Ratio (DR), Debt Equity Ratio (DER), Interest Coverage Ratio (ICR), Return on Assets (ROA)

INTRODUCTION

The proportionate mix of Debt and Equity in financing a firm's investment proposals has been the subject of intensive theoretical modeling and empirical examination over the years having its tenet in the implication of such a mix on corporate performance. A good number of studies revealed financial leverage significantly affects the value of firm. Leverage is basically explained as the use of borrowed fund to make an investment and return on that investment. The main objective of this paper is to investigate the nature and degree of association between financial leverage and the value of firm of some selected automobile companies.

The Indian auto industry became the 4th largest in the world with sales increasing 9.5 per cent year-on-year to 4.02 million units (excluding two wheelers) in 2017. During April-November 2018, highest year-on year growth in domestic sales among all the categories was recorded in commercial vehicles at 31.49 per cent followed by 25.16 per cent year-on-year growth in the sales of three wheelers.

STATEMENT OF THE PROBLEM

While taking the capital structure decision management should ensure that these decisions taken are in consonance with the shareholders' wealth maximization objectives which encompass the profit maximization objective of the firms. Achievement of this goal depends on a number of variables that vary in its impact on company's value from one variable to another and from one sector to another.

CONCEPTUAL FRAMEWORK

Firms that borrow large sums of money during a business recession are more likely to default to pay off their debts as

they mature; they will end up with high leverage and are more likely to end up with a potential risk of bankruptcy. Leverage increases the level of debt in the capital structure and the turnover of the business and hence its profits, resulting in an increase in returns to the business owners.

Financial leverage

This study is limited to financial leverage, thus a lucid description is necessary. Financial leverage occurs when there is no fixed financial charges (interest and preference dividend).

Measures of financial leverage

1. **Debt ratio:** It can be interpreted as the proportion of a company's assets that are financed by debt. This is measured by the total debt to total assets of the firm and is a proxy to leverage.

$$\text{Debt Ratio (DR)} = \text{Total Debt/capital employed}$$

2. **Debt to equity ratio:** The D/E ratio is an important metric used in corporate finance. Debt equity ratio has implications for the shareholders' dividends and risk, this affect the cost of capital and the market value of the firm.

$$\text{Debt Equity ratio (DER)} = \text{Total Liability/ Total Equity}$$

3. **Interest coverage ratio:** The interest coverage ratio is a debt ratio and profitability ratio used to determine how easily a company can pay interest on its outstanding debt. It measures the margin of safety a company has for paying interest on its debt during a given period.

$$\text{Interest Coverage Ratio (ICR)} = \text{Earnings Before Interest and Tax (EBIT)/ Interest}$$

¹ Assistant Professor, Gitarattan International Business School, Rohini, Delhi. E-mail Id: juhi.ahuja@gitarattan.edu.in

² Student, Gitarattan International Business School, Rohini, Delhi. E-mail Id: agganmol@gmail.com

Investors usually have an idea of financial risk of a firm by comparing the coverage ratios of similar firms with an accepted industry standard, the investors.

Financial performance

Profitability: Profit is the ultimate goal of business organizations.

Return on capital employed (ROCE): ROCE is a financial ratio that refers to how much profit a company earned compared to the total amount of capital invested or found in the statement of financial position.

Return on Assets (ROA)

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings.

Here, ROA is considered as a dependent variable and effect of independent variables on ROA will be analyzed. ROA gives a quick indication of whether the business is continuing to earn an increasing profit on each dollar of investment. Investors expect that good management will strive to increase the ROA – to extract greater profit from every dollar of assets at its disposal.

The return on assets ratio formula is calculated by dividing net income by average total assets.

$$\text{Formula: } - \frac{\text{Net Income}}{\text{Total Assets}}$$

Growth rate: Firm's growth serves as a motivation for stakeholders like investors, employees, suppliers, government and the society at large.

Liquidity: Liquidity involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet short term obligations on one hand and avoid excessive investment in these assets on the other hand. Current ratio is used as a proxy for liquidity analysis.

$$\text{Current ratio} = \text{Current Assets/Current liabilities}$$

THEORETICAL FRAMEWORK

Trade-off theory

The theory assumes that a firm has an optimum capital structure based on trade off between costs and benefits of using debt. The static trade off theory postulates that larger size companies have a higher preference for debt financing because of a lower probability of bankruptcy due to their tendency for diversification.

The irrelevance theory

The capital structure of a firm is the mix of equity and debt that the company uses to finance its investments. This theory

says that the value of a firm is not affected by capital structure but by earning ability of the assets.

TRENDS IN AUTOMOBILE INDUSTRY

- 1 Availability of large number of variants, Stiff competition between them, and long list of alternatives to choose from has given power to customers to choose whatever they like.
- 2 Making strategic alliances can be a smart strategy for Automobile companies.
- 3 Presence of such a large number of players in the Automobile industry results into extensive competition, every company eating into others share leaving little scope for new players.
- 4 Due to the fact that mature markets are already overcrowded, industry is shifting towards emerging markets by building facilities, R & D centers in these markets.

OBJECTIVES OF THE STUDY

- (a) To determine whether financial leverage has a significant effect on financial performance of the companies.
- (b) To ascertain the effect of financial leverage on efficiency of companies in automobile sector measured by Return on Assets.

SCOPE OF THE STUDY

To ensure that the objectives of the study are achieved, the study adopted a five year period which is considered sufficient to establish a relationship among the variables. The independent variable is capital structure of automobile companies and dependent variable is profitability/financial performance of automobile companies.

RESEARCH HYPOTHESIS

The hypotheses for this study are stated in null form as follows:

1. H_{01} : there is no significant impact of debt ratio (DR) on ROA of selected automobiles companies in India.
2. H_{02} : there is no significant impact of Debt Equity ratio (DER) on ROA of selected automobiles company in India.
3. H_{03} : there is no significant impact of Interest Coverage Ratio (ICR) on ROA of selected automobiles companies in India.

SIGNIFICANCE OF THE STUDY

This study will be helpful to certain groups of people. They are: Finance managers, policy makers, academic community. Policy makers in the industry would be able to formulate appropriate debt and profitability management policy that would put the company above others in the same industry

because the use of debt increases the earnings on equity capital as long the rate of return on the firms' investment exceeds the explicit cost of financing the investment.

RESEARCH METHODOLOGY

Ex post facto research design has been used. It is a method in which groups that already exist are compared on some dependent variables. The collected data has been collected, analyzed and tabulated with the help of different financial ratios of different companies i.e. Tata motors, Maruti Suzuki limited, Mahindra, Ashok Leyland and TVS. Secondary data was collected through annual reports of selected listed companies for last five years 2014 to 2018.

As discussed in concept, Leverage affects the profitability of the firm. So to test this effect correlation and regression techniques was used to analyze the data. And this analysis has been shown in the form of a table. (Dr. Sajjan Choudhuri, 2018)

LITERATURE REVIEW

Umer Iqbal and Muhammad Usman study (2018) results show that financial leverage has a negative and significant effect on firm ROE and financial leverage has a positive and significant effect on firm ROA. Bhargav Pandya(2018) study aimed at analyzing the impact of financial leverage on market value added in the context of companies listed on Bombay Stock Exchange and provide empirical evidence. Debt equity ratio and debt ratios are found to be statistically significant in explaining variation in market value added of the sample companies. Baljinder Singh, Dr. Amandeep Singh (2017) study concludes that majority of the sampled private sector companies have been taking little debt during post-reform period and become more dependent on internal finance. M. Singhanian and A.Seth (June 2018) study stated the hypothesis that has been tested is that the debt ratio at time t depends on the size of the company at time t, the liquidity of the company at time t, the growth of the company at time t and the interest coverage ratio at time t. UtkarshGoel, SaurabhChadha, Anil K.Sharma study (2015) analyses the impact of financial leverage on various measures of operating liquidity. It was found that financial leverage has significant impact on different measures of

operating liquidity. Sanjay Bhayani study (2009) study indicates that no impact of financial leverage on cost of capital was found in the cement industry in India, i.e. no significant linear relationship between the financial leverage and cost of capital exists, and there is no correlation between the financial leverage and total valuation within the cement industry. Tooba Rahel, Faiza Maqbool Shah (2015) taken the Degree of Operating Leverages (DOL), Degree of Financial Leverage (DFL) & Degree of Combined Leverage (DCL) as independent variables and Earning per Share (EPS) as the dependent variable for the study. Ahmed Hussein Mohamed (2017) study obtained data from the 10-listed manufacturing and allied firms. The study concluded that financial leverage does not significantly affect the financial performance of manufacturing and allied firms listed at the NSE. Sanjay Hiran (2016) study obtained results from statistical techniques that inventory turnover ratio is negative association with operating profit, quick ratio is positive association with operating profit & net profit while current ratio has negative relation with net profit. Morteza Dadgostar MoghadamI and Mehrnoosh Jafari (2015) study indicate that financial leverage has a significant positive relationship with the performance of sample companies. In other words, firms with higher debt levels are more profitable. Narjess Boubakri Jean Claude Cosset (2002) study found a decline in leverage following privatization but this change is significant only for unadjusted leverage ratios. Dr. Maher Odeh Al-Shamaileh, Salim. M. Khanfar study (2014) study concluded that the independent financial variables explain the 4.4% percentage of changes occurring in the Profitability since they are considered as the dependent variable. Enekwe, Chinedu Innocent; Agu, Charles Ikechukwu And Eziedo Kenneth Nnagbogu study (2014) study revealed that all the independent variables have no significant effect on financial performance of the sampled companies. Titman and Wessels (1988) reflects that those firms which are basically engaged in manufacturing machines and equipment should be financed with relatively low debt capital. Aivazian, Ge, and Qiu (2005) found stronger effect in case of low growth firms as compared to high growth firms.

DATA PRESENTATION AND DATA ANALYSIS

1. Escorts

Table 1: Financial data of Escorts

Variables/Year	Independent Variables			Dependent Variable
	DR	ICR	DER	ROA
2014	0.160	3.43	0.20	150.52
2015	0.185	2.07	0.23	147.56
2016	0.142	3.07	0.16	153.79
2017	0.097	9.77	0.03	162.44
2018	0.005	19.05	0.01	207.88

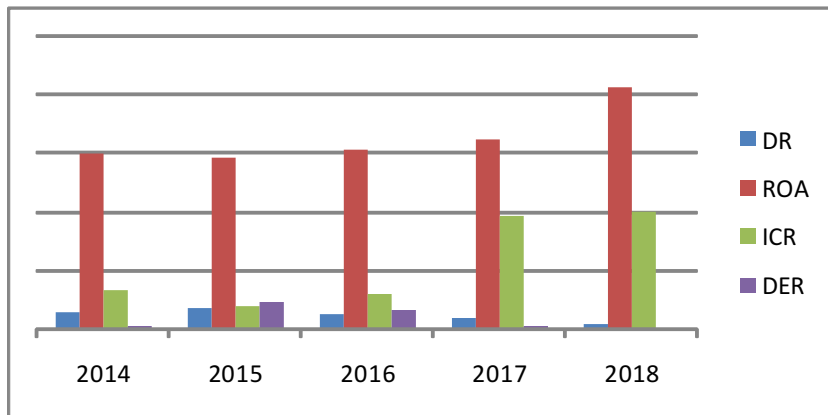


Figure 1: Graphic representation of DR, DER, ICR and ROA of Escorts

2. Tata Motors

Table 2: Financial data of Tata Motors

Variables/Year	Independent Variables			Dependent Variable
	DR	ICR	DER	ROA
2014	0.43	0.64	0.76	59.51
2015	0.57	-1.22	1.35	46.10
2016	0.37	1.27	0.61	68.51
2017	0.47	-0.28	0.89	62.32
2018	0.44	1.01	0.81	59.40

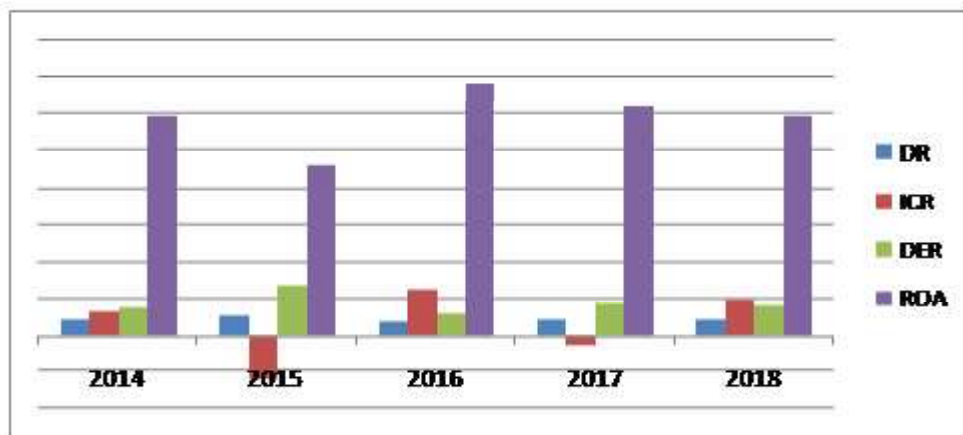


Figure 2: Graphic representation of DR, DER, ICR and ROA of Tata Motors

Interpretation

The data of Table 1 shows that there is inverse relation between DR and DER and ROA because when these ratios are increasing then ROA is decreasing and vice-versa but at the same time when ICR is increasing then ROA is also increasing so there is a direct positive relationship between ICR and ROA.

The data of Table 2 shows that ICR is decreasing then increasing from 2014 to 2018. The lower the interest coverage ratio, the higher the company's debt burden and the greater the possibility

of bankruptcy or default. A high ratio indicates there are enough profits available to service the debt, but it could also mean that the company is not using its debt properly. A high ICR indicates there are enough profits available to service the debt, but it could also mean that the company is not using its debt properly. DR has negative relation with ROA but when ICR is increasing then ROA is also increasing so there is a direct positive relationship between ICR and ROA.

3. TVS

Table 3: Financial data of Tata Motors

Variables/Year	Independent Variables			Dependent Variable
	DR	ICR	DER	ROA
2014	0.251	14.84	0.34	29.79
2015	0.358	17.64	0.56	34.63
2016	0.279	13.91	0.39	41.22
2017	0.310	16.90	0.45	50.69
2018	0.264	16.52	0.36	60.63

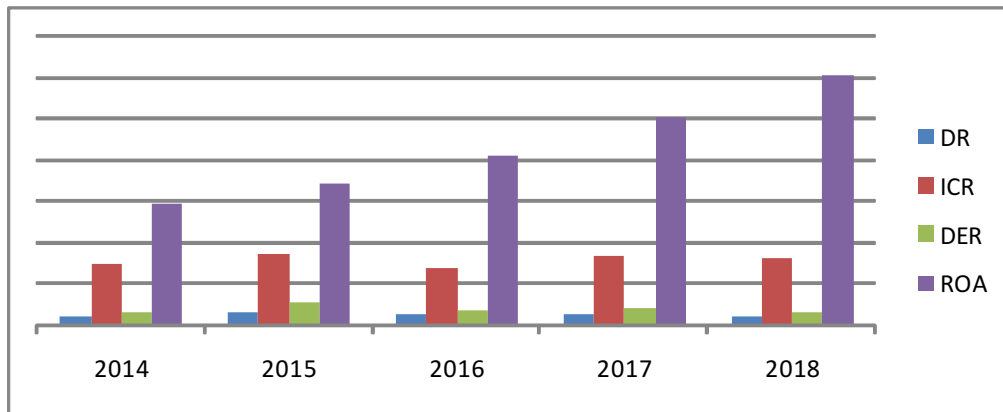


Figure 3: Graphic representation of DR, DER, ICR and ROA of TVS

4. Mahindra & Mahindra (M&M)

Table 4: Financial data of Mahindra & Mahindra (M&M)

Variables/Year	Independent Variables			Dependent Variable
	DR	ICR	DER	ROA
2014	0.182	17.65	0.22	275.63
2015	0.119	18.89	0.14	309.85
2016	0.075	23.66	0.08	361.03
2017	0.093	27.16	0.10	431.26
2018	0.086	51.52	0.09	243.68

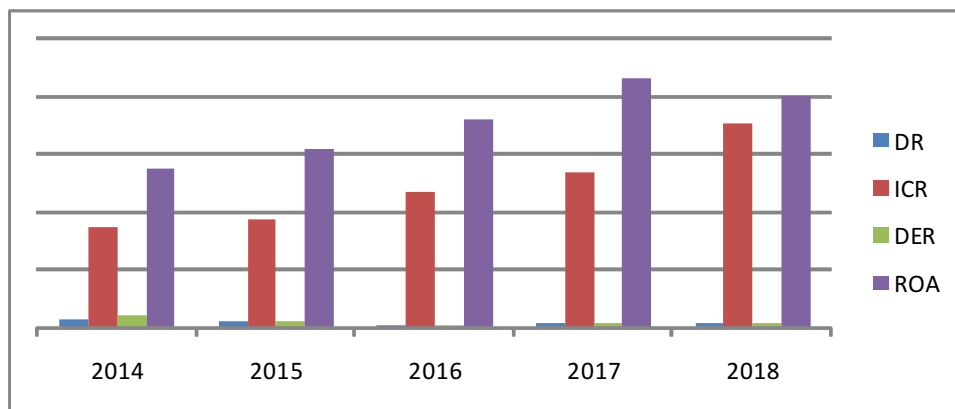


Figure 4: Graphic representation of DR, DER, ICR and ROA of Mahindra & Mahindra

Value of R square (DER) is 0.899 which depicts that the Debt Equity Ratio (Independent variable) explained 89.9% changes in the Return on Assets (Dependent variable). The significance value i.e. (sig) is 0.014 .Since the value of p is more than 0.05, null hypotheses is rejected and alternative hypothesis is accepted. Therefore, it is concluded that there is a significant relationship between DER and ROA.

Interpretation

As per Table 3 an interest coverage ratio of at least 2 is considered the minimum acceptable amount for a company that has solid, consistent revenues but TVS has ICR more than 10 in every year so company performs positively. In 2017 DER was 0.45 and in 2018 it decreased to 0.36 by 20% which lead to an increase in ROA from 50.69 to 60.63. So, when DER decreases then ROA increases i.e, negative relationship between DER and ROA. The data shows that there is inverse relation between DR and DER and ROA because when these ratios are increasing then ROA is decreasing and vice-versa but at the same time when ICR is increasing then ROA is also increasing so there is a direct positive relationship between

ICR and ROA.

As per Table 4 as the debt to equity ratio continues to drop below 1, then that means its assets are more funded by equity. ICR is increasing in 2015 from 17.65 to 18.89 and ROA is also increasing from 272.63 to 309.85. Therefore, there is a positive relation between ICR and ROA.

As per Table 5 above data represents Debt ratio (DR), Interest coverage ratio (ICR), Debt equity ratio (DER) and Return on asset (ROA) of Ashok Leyland. ICR is increasing continuously in every year. It was -0.32 in 2014 and increased to 18.09 in 2018. A high ratio indicates there are enough profits available to service the debt, but it could also mean that the company is not using its debt properly. A high ICR indicates there are enough profits available to service the debt, but it could also mean that the company is not using its debt properly. Data shows that DR and DER have negative relation with ROA while ICR has a positive relation between ROA. It indicates that as DR and DER increases, the ROA decreases and vice versa.

5. Ashok Leyland

Table 5: Financial data of Ashok Leyland

Variables/Year	Independent Variables			Dependent Variable
	DR	ICR	DER	ROA
2014	0.466	-0.32	1.17	12.30
2015	0.336	1.87	0.63	14.40
2016	0.254	7.61	0.34	19.00
2017	0.180	11.72	0.22	21.53
2018	0.067	18.09	0.07	24.48

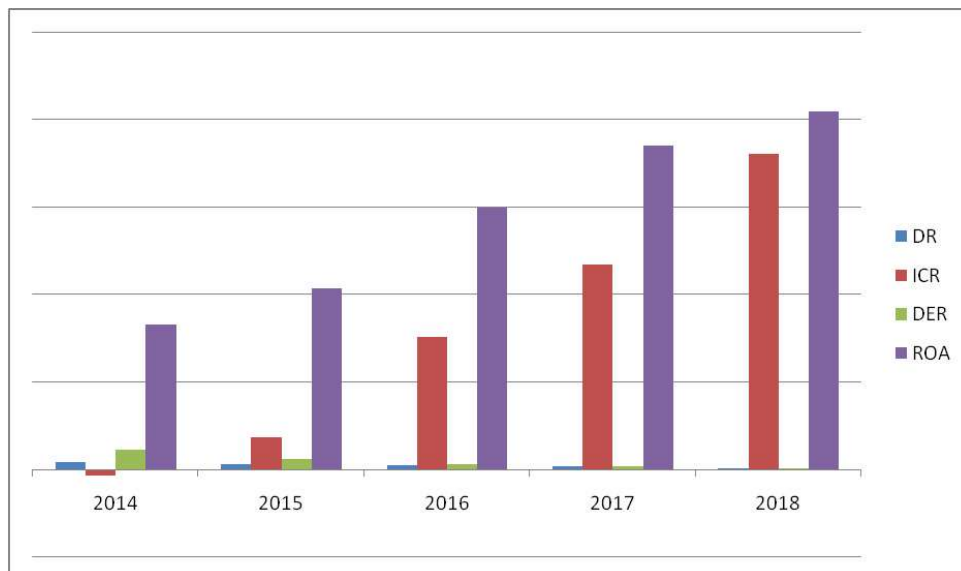


Figure 5: Graphic representation of DR, DER, ICR and ROA of Ashok Leyland

Table 6: Correlation and Regression Analysis of DR, ICR and DER with ROA

Companies	Correlation of DR, ICR, DER with ROA			Regression of DR, ICR and DER with ROA	
	DR	ICR	ROA	R ²	Sig. Value
Escorts	0.973	-0.801	0.969	0.940	0.000
Tata Motors	0.815	-0.948	-0.451	0.899	0.014
TVS	0.281	-0.202	0.162	-	-
Mahindra & Mahindra	-0.370	-0.375	-0.379	-	-
Ashok Leyland	0.991	-0.943	-0.984	0.889	0.016

Table 6 shows the correlation and regression of DR, ICR and DER with profitability (ROA). All the companies taken as sample have negative relationship between DR and ROA. Financial performance of specific companies in automobile sector is going good due to less debt. The more leverage a company employs, the more profitable it becomes. In other words companies increased in size and profitability measured by Return on Assets, because they included debt in their capital structure.

CONCLUSION AND RECOMMENDATIONS

It was hypothesized in the study that there is a significant relationship between financial leverage and profitability of the firm. In the conclusion, it can be said that financial leverage certainly affects financial performance especially in terms of profitability. Therefore, every firm should maintain a balanced capital structure neither too much of debts nor too much equity is desirable. If it takes too much of debt, the firm’s value has a propensity to deteriorate. Companies should employ debt in the capacity that cost do not outweigh the benefits. Firms in the automobile sector listed in stock exchanges should increase the equity portion of their debt equity mix in order to improve financial performance.

BIBLIOGRAPHY

1. Choudhari, Bhatia and Panjwani (2018). “NPA and its impact on Net Profitability of Public Sector Bank”, Global Information and Business Strategies, Vol. 9, Issue 1, ISBN:978-93-5346-477-6.
2. Iqbal and Usman, (2018).”Impact of Financial Leverage on Firm Performance on Textile Composite Companies”, SEISENSE Journal of Management, Vol. 1. Issue 2, May 2018 DOI: 10.5281/ zenodo.1241454
3. Pandya, (2018).”Impact of Financial leverage on Market Value Added: Empirical Evidence from India”. Journal of Entrepreneurship Business and Economics, ISSN 2345-4695 2016, 4(2): 40–58
4. Singh and Singh, (2017).”Impact of leverage on Financing Pattern of Corporate Sector in India –A Study of Private Sector companies during post liberalization”. ENVISION – International Journal of Commerce and Management,

ISSN: 0973-5976 (Print), 2456-4575, UGC –Sr. No.62481 VOL-11, 2017

5. Singhania and Seth, (2018).”Financial leverage and investment opportunities in India: An empirical study”. Journal of Business Case Studies – September 2008 Volume 4, Number 9
6. Goel and Chadha, Sharma (2015).”Operating Liquidity and Financial Leverage: Evidences from Indian Machinery Industry”. XVIII Annual International Conference of the Society of Operations Management (SOM-14), Procedia - Social and Behavioural Sciences 189 (2015) 344 – 350
7. Bhayani, (2009).”Impact of Financial Leverage on Cost of Capital and Valuation of Firm: A Study of Indian Cement Industry”. International Journal of Commerce and Management, Research ISSN: 2455-1627, Volume 3; Issue 1; January 2017; Page No. 138-142
8. Rahel and Shah, (2015).”A Study That Identify the Relationship between the Financial Leverage and Firms Profitability: Empirical Evidence from Oil and Gas Companies”. International Journal of Scientific & Engineering Research, Volume 6, Issue 11,ISSN 2229-5518
9. Mohamed, (2017).”Effect of financial leverage on Financial Performance of manufacturing and allied firms”.International Journal of Science and Research (IJSR), ISSN (Online): 2319-7064
10. Hiran, (2016).”Financial Performance Analysis of Indian Companies Belongs to Automobile Industry with Special Reference to Liquidity & Leverage”. International Journal of Multidisciplinary and Current Research, ISSN: 2321-3124
11. Moghadam and Jafari, (2015).”The Role of Financial Leverage in the Performance of Companies Listed in the Stock Exchange”. International Journal of Commerce and Management Research ISSN: 2455-1627, Volume 2; Page No. 138-142
12. Boubakriand Cosset, (2002).”The Financial and Operating Performance of Newly Privatized Firms: Evidence from

Developing Countries”. Centre of Research in Economics and Finance Applications (CRÉFA), P.Q. G1K 7P4 Canada

13. Shamaileh and Khanfar, (2014).”The Effect of the Financial Leverage on the Profitability in the Tourism Companies (Analytical Study- Tourism Sector)”. Business and Economic Research ISSN 2162-4860 2014, Vol. 4, No. 2
14. Dey, Hossain & Rahman, (2018).”Effect of Corporate Financial Leverage on Financial Performance: A Study on Publicly Traded Manufacturing Companies”. Asian Social Science; Vol. 14, No. 12; 2018 ISSN 1911-2017