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An Empirical Study on Relationship between Leverage and Profitability in Bata India Limited

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Abstract: Leverage is the key decision area in financial management. This paper concentrates on leverage and its relationship between profitability in Bata India Limited. In this present research paper, an attempt is made to analyze the performance of Bata India Limited, To analyze the leverage analysis in Bata India and to study the relationship between leverage and profitability in Bata India Limited. The exploratory research design is adopted in this study which employs secondary data .The financial statements of Bata India Limited have been collected over a period of 7 years (2005-06 to2012-13). The data collected is analyzed by the percentages, averages, ratios and Correlation analysis tools reveals that the research evidence of the study indicates that, that degree of operating leverage is statistically significant positive correlation with the ROI. It is observed that degree of financial leverage is positively correlated with the ROI .It means that degree of financial leverage of Bata India was not at optimum level. It is suggested to Bata to revise its capital structure which should include the optimum blend of equity and borrowed funds so that it has positive impact on Return on Investment. More over degree of combined leverage is positively correlated with ROI of Bata India. The financial performance of the Bata India is satisfactory. The Bata India is employing less debt funds so it can't get the financial leverage benefits. Therefore the Bata India has to revise its capital structure so that financial leverage will help to maximize the shareholders wealth.

Keywords: Combined Leverage, Financial Leverage, Operating Leverage, Profitability and ROI.

I. INTRODUCTION

"Leverage," it means that the business has borrowed money to finance the purchase of assets. The other way to purchase assets is through use of owner funds, or equity. One way to determine leverage is to calculate the Debt-to-Equity ratio, showing how much of the assets of the business are financed by debt and how much by equity.

Leverage is not necessarily a bad thing. Leverage is useful to fund company growth and development through the purchase of assets. But if the company has too much borrowing, it may not be able to pay back all of its debts.

II. REVIEW OF LITERATURE

The effectiveness of either bond covenants or implicit capital market monitoring is reduced specially in weak form of market efficiency. Since the market cannot effectively monitor investment decisions, it instead limits the amount of debt. Because high-growth firms cannot be effectively monitored, they will have lower financial leverage (Benjamin, 1985)[1]. For analyzing the effect of leverage on shareholder's return, this study has suggested that profitability has strong influence on the financial leverage and on shareholders' return in engineering industry in India (Chandra, 1997)[2].Financial leverage, or an increase in financial efficiency, called the variation of return on equity, depends on the return on assets and the cost of credit i.e., interest rate. Financial lever also expresses the impact of financial expenses due to loans on the return on equity of an enterprise (Brezeanu, 1999)[3]. Financial risk analysis can be done both on the breakeven point and by analyzing changes in the return on equity due to the financial policy, which can be followed by a financial leverage effect (Eros-Stark and Pantea, 2001)[4].

This study conducted on the topic financial leverage and its impact on shareholders' return in Indian cement industry. It finds that the profitability of a firm is positively related to its financial leverage. But no researcher has tried to study the impact of financial leverage on cost of capital and valuation of firm and thus the present paper seeks to make a humble beginning in this respect (Bhayani, 2006)[5]. Financial leverage can increase shareholders' return and as well can increase the firm's risk also. The financial leverage employed by a firm is intended to earn more on the fixed charges funds than their relative costs (Pandey, 2007)[6].Risk management effectiveness combines both the ability to exploit opportunities and avoid adverse economic impacts, and has a significant positive relationship to performance. This effect is moderated favorably by investment in innovation and lower financial leverage (Anderson, 2009)[7]. No impact of financial leverage on cost of capital is found in the cement industry i.e., no significant linear relationship exists between the financial leverage and cost of capital (Bhayani J Sanjay, 2009)[8].

A high level of financial leverage allows shareholders to obtain a high return on equity, but they are also exposed to a higher risk of significant loss if the return on assets is low. Also, using loans may lead to restricting the independence of the company's management, and creditors are interested in the indebtedness of the company. Financial leverage is combined with the operating leverage. The combined effect is equal to the product of the operating and financial leverage (Nicoleta, 2010)[9].

The variables sales, interest, cash flow, asset structure, interest coverage, firm's size, retained earnings, earnings before interest and tax and intrinsic value of shares influence financial leverage (Franklin and Muthusamy,2011)[10]. If we see the overall impact of financial leverage on earnings per share of high-leverage and low-leverage companies in India, we find that there is no impact. The overall findings show that financial leverage has no impact on price-earnings ratio of either high-leverage companies or lowleverage companies. (Negi Pushpa, Sankpal Shilpa, Mathur Garima,Vaswani Nishchaya, 2012)[11].It is important to note that financial leverage is a speculative technique and there are special risks and costs involved with financial leverage. Indeed there can be no assurance that a Financial Leverage strategy will be successful during any period in which it is employed. (Pachori Sachchidanand,Totala K Navindra, 2012)[12].

Need of the study

Present condition of capital market is complex and unexpected where the investors require in-depth research before their rational investment decisions. Present study provides useful information to the investors for making investment decisions as leverage is influencing the long term financial performance of the firm. Under this research study financial leverage, operating leverage and combined leverage analysis and their impact on return on equity of Bata India Limited which is largest foot wear retailer and industry leader which attracts many domestic and foreign institutional investors in addition to the large number of retail investors. No research is attempted in analyzing the leverage and its relationship with profitability with reference to multinational foot wear retailer of India.

III. Objectives of the Study

- To analyze the financial performance of Bata India Ltd.
- To examine the Leverage analysis in Bata India Ltd.
- To study the relationship between Leverage and profitability in Bata India Ltd.

Hypotheses

- H_1: *There is significant positive correlation between Operating Leverage and Profitability of Bata India.*
- H_2: *There is significant positive correlation between Financial Leverage and Profitability of Bata India.*
- H_3: *There is significant positive correlation between combined leverage and Profitability of Bata India.*

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IV. RESEARCH METHODOLOGY

Sources of data

Primary data is collected from the managers and officials of Bata Indian Ltd through discussion.The secondary data is collected from the published & unpublished sources, books, Journals, websites, magazines etc.

Research Technique:

In this study exploratory research technique is adopted which explores the existing information, analyzed & interpret result in meaningful way.

Methodology

- All possible ratios (profitability ratios, liquidity ratios, and leverage ratios) are used to analyze the financial performance of Bata Indian limited for the period 2005-06 to 2012-13.
- For examining the leverage analysis in Bata Indian Ltd, operating leverage, financial leverage and combine leverage are calculated.
- **Degree of Operating Leverage** (DOL)

  The degree of operating leverage depends upon the amount of fixed elements in the cost structure. It can be determined by means of a break even or cost volume profit analysis it can be calculated as
- DOL = percentage change in EBIT / Percentage change in sales

Degree of Financial Leverage (DFL)

Financial leverage exists whenever a firm has debts and other sources of funds that carry fixed charges. DFL = % change in EPS / % change in EBIT

Degree of Combined Leverage (DCL)

The Degree of Combined Leverage (DCL) is the leverage ratio that sums up the combined effect of the Degree of Operating Leverage (DOL) and the Degree of Financial Leverage (DFL) has on the Earning per share or EPS given a particular change in sales. This ratio helps in ascertaining the best possible financial and operational leverage that is to be used in any firm or business.

- The relationship between leverage and profitability is analyzed through statistical tools such as Pearson coefficient of correlation.

Tools of data analysis:

The collected data will be analyzed by using ratio's, leverage tools & statistical software such as SPSS are used

V. DATA ANALYSIS

Table -1: Degree of Operating Leverage

Year	Sales	Operation profit	%EBIT	%Sales	DOL
2006-07	770.93	57.37	----	----	----
2007-08	867.76	72.25	25.93	12.56	2.06
2008-09	989.96	102.48	78.62	28.41	2.76
2009-10	1096.21	147.3	156.75	42.19	3.43
2010-11	1258.08	181.8	216.89	63.18	3.43
2011-12	1540.59	247.95	332.19	99.83	3.326
2012-13	1837.97	274.43	378.35	138.40	2.73

Source: Calculated from the annual reports of the Bata India Ltd.

The degree of operating leverage of the firm was in mixed trend during the study period from 2006 to 2013. The average of leverage ratio maintained by the Bata India is 2.95. The largest affect of DOL in The year 2009-2010and 2010-2011 to3.43 due to high percentage in EBIT than the percentage change in sales. The low effect of operating leverage in the year 2007-2008 to2.06 due to high increase in sales than the increase in the EBIT. Therefore, it is observed that the firm is not maintaining optimum operating leverage. A low level or moderate operating leverage is good for the firm. It is suggested to the firm to maintain low operating leverage to moderate operating leverage which optimizes the percentage increase in sales than the percentage increase in the EBIT.

Table -2: Degree of Financial leverage

Year	***EPS(Rs)***	***Operation profit(*(Rs.Cr)**	***%EPS***	***%EBIT***	***Financial* leverage**
2006-07	6.25	57.37	----	----	----
2007-08	7.38	72.25	18.08	25.93	0.69
2008-09	9.45	102.48	51.2	78.62	0.65
2009-10	10.46	147.3	67.36	156.75	0.42
2010-11	14.84	181.8	137.44	216.89	0.63
2011-12	35.14	247.95	462.24	332.19	1.39
2012-13	26.7	274.43	327.2	378.35	0.86

Source: Calculated from the annual reports of the Bata India Ltd.

The financial leverage of the firm was in mixed trend during the study period from 2006-07 to 2012-13. The average financial leverage ratio maintained by the Bata India is 0.77. The largest effect of DFL in the year 20011-2012 was 1.39 due to high percentage in EPS than the percentage change in EBIT. The low effect of financial leverage in the year 2009-2010 was 0.42 due to high increase in EBIT than the increase in the EPS. Therefore, it is observed that the firm is not maintaining optimum financial leverage. A moderate financial leverage is good for the firm. It is suggested to the firm to maintain moderate financial leverage which optimizes high percentage in EPS than the percentage change in EBIT.

Table-3: Degree of Combined Leverage (DCL)

Year	% change in EPS	% Change in Sales	DOL	DFL	DCL = DOL*DFL
2006-07	----	----	----	----	-----
2007-08	18.08	12.56	2.06	0.69	1.42
2008-09	51.2	28.41	2.76	0.65	1.79
2009-10	67.36	42.19	3.43	0.42	1.44
2010-11	137.44	63.18	3.43	0.63	2.16
2011-12	462.24	99.83	3.326	1.39	4.62
2012-13	327.2	138.40	2.73	0.86	2.35

Source: Calculated from the annual reports of the Bata India ltd.

The degree of combined leverage of the firm was in mixed trend during the study period from 2006-07 to 2012-13. The average degree of combined leverage maintained by the Bata India is 2.30. The Bata attained a maximum DCL of 4.62 and a minimum level of 1.42 .The percentage change in EPS is maximum in 2011-12 where DCL was maximum and operating leverage was at moderate level. In 2012-13, When DCL was 2.35, There was maximum change in EPS and operate leverage was less than the previous year .Therefore; it is observed that the firm is not maintaining optimum combined leverage. A moderate financial leverage and low operating leverage is desirable the firm. It is suggested to the firm to maintain moderate combined leverage which optimizes high percentage increase in sales than the percentage increase in EPS.

LIQUIDITY RATIO

These ratios measures the liquidity position or capacity of the firm that meet the short term obligations

Table -4 : Current Ratio

Year	Current Assets (Rs.Cr)	Current Liabilities(Rs.Cr)	Current Ratio
2006-07	302.13	177.71	1.70
2007-08	340.41	198.4	1.71
2008-09	326.92	194.36	1.68
2009-10	320.08	193.28	1.10
2010-11	345.21	313.14	1.10
2011-12	445.23	258.83	1.72
2012-13	694.14	350.6	1.97

Source: calculated from the annual reports of the Bata India ltd.

The current Ratio of the firm was in mixed trend during the study period from 2006 to 2013. The average of current ratio maintained by the Bata India is 1.5. The average current ratio was less than standard norm of 2:1. The maximum level of current ratio was 1.97 in the year 2012-2013 and minimum level of current ratio was 1.1 in the years 2009-2010 and 2010-2011.Therefore, it is observed that the liquidity position of the Bata India Ltd is not satisfactory so the firm cannot meet its short term obligations effectively. It is suggested to the firm to maintain sufficient liquidity level so that there should be trade-off between profitability and liquidity.

Table -5 : Quick Ratio

Year	Quick Assets (Rs.Cr)	Current liabilities (Rs.Cr)	Quick Ratio
2006-07	25.77	177.71	0.14
2007-08	36.67	198.4	0.18
2008-09	34.69	194.36	0.18
2009-10	42.62	193.28	0.22
2010-11	45.85	313.14	0.14
2011-12	53.91	258.83	0.20
2012-13	232.05	350.6	0.66

Source: Calculated from the annual reports of the Bata India Ltd.

The Quick Ratio of the firm was in mixed trend during the study period from 2006-07 to 2012-13. The average of Quick ratio maintained by the Bata India is 0.25. The average Quick ratio was less than standard norm of 1:1. The maximum level of Quick ratio was 0.66 in the year 2012-2013 and a minimum level of Quick ratio was 0.14 in the years 2006-2007 and 2010-2011.Therefore, it is observed that the liquidity position of the Bata India Ltd is not satisfactory so the firm cannot meet its short term obligations effectively. It is suggested to the firm to maintain sufficient liquidity level so that should have there is tradeoff between profitability and liquidity.

Table -8: Debt –Equity Ratio

Year	Total debt (Rs.Cr)	Net worth(Rs.Cr)	Debt-equity ratio
2006 -07	48.33	212	0.22
2007 -08	51.8	251.38	0.20
2008 -09	44.63	291.15	0.15
2009 -10	25.05	334.28	0.03
2010-11	13.77	398.24	0.30
2011-12	19.4	574.3	0.30
2012-13	0.00	700.33	0.00

Source: Calculated from the annual reports of the Bata India Ltd.

The debt equity ratio of the firm was in mixed trend during the study period from 2006 to 2013. The average of debt equity ratio maintained by the Bata India is 0.12. The average debt – equity ratio was less than standard norm of 2:1. Therefore, the firm will not get the leverage benefits. It is observed that Bata India used less debt capital than the equity funds. It is suggested to the firm to revise the capital structure by employing sufficient debt funds so that it has positive impact on the shareholders wealth.

Table -10: Total Assets Turnover Ratio (TATR)

Year	Sales(Rs.Cr)	Total Assets(Rs.Cr)	TATR
2006 -07	770.93	266.31	2.89
2007 -08	867.76	303.19	2.86
2008 -09	989.96	335.8	2.94
2009 -10	1096.21	359.33	3.05
2010-11	1258.08	412.01	3.05
2011-12	1540	593.72	2.62
2012-13	1837.97	700.33	2.62

Source: Calculated from the annual reports of the Bata India Ltd.

The total Assets turnover ratio of the firm was in mixed trend during the study period from 2006-07 to 2012-13. The average of Total Assets turnover ratio maintained by the Bata India is 2.86. The higher total assets turnover ratio is desirable for any firm. Therefore, the firm did not utilize total assets effectively in generating the sales of the firm. It indicates that firm's management efficiency was not superior. It is suggested to the firm's management to optimize the utilization of total assets to generate maximum sales. Moreover, Management of the firm should focus on employing the appropriate total assets so that percentage change in sales should be more than percentage change in total assets.

Table -11 : Working Capital Turn over Ratio(WCTR)

Year	**Sales**(Rs.Cr)	**Working capital**(Rs.Cr)	WCTR
2006 -07	770.93	124.42	6.19
2007 -08	867.76	142.01	6.11
2008 -09	989.96	132.56	7.46
2009 -10	1096.21	126.8	8.64
2010-11	1258.08	32.07	39.22
2011-12	1540.59	186.4	8.20
2012-13	1837.97	343.54	5.35

Source: Calculated from the annual reports of the Bata India Ltd.

The Working Capital turnover ratio of the firm was in mixed trend during the study period from 2006-07 to 2012-13. The average of Working Capital turnover ratio maintained by the Bata India is 11.6 times. The attained a maximum working capital turnover of 39.22 times in 2010-11 and a minimum value of 5.35 times in the 2012-13 years. The higher working capital turnover ratio is desirable for any firm. Therefore, the firm utilized working capital effectively in generating the sales of the firm. It indicates that firm's management efficiency was higher. It is suggested to the firm's management to continue the present utilization of working capital in future also.

Table -12: Return on Investment

Year	ROI (%)
2006 -07	28.31
2007 -08	23.30
2008 -09	30.16
2009 -10	39.16
2010-11	43.00
2011-12	40.41
2012-13	36.12

Source: Calculated from the annual reports of the Bata India Ltd

The firm's Return on Investment was in mixed trend during the study from 2006-07 to 2012-13. The ROI is used for measuring the overall efficiency of a firm. As the primary objective of business is to maximize its earnings; this ratio indicates the extent to which this primary objective of business is being achieved. This ratio is of great importance to the present and prospective shareholders as well as the management of the firm. As this ratio reveals how well the resources of a firm being utilized, higher the ratio, better are the results. The firm's attained maximum ROI of 43.00 % in 2010-11 and was a minimum of 23.30 % in 2007-08. The average ROI maintained by Bata India was 34.35 % during the study period from 2006-07 to 2012-13.The firm's overall efficiency is satisfactory as a Industry leader. Therefore, it is suggested to the firm to continue it in future also and try to enhance it by controlling expenses simultaneously enhancing the sales.

Relationship between Leverage and Profitability

Correlation is a statistical technique which measures an association or relationship between two or more variables. If there is a relationship or association between two variables then correlation is called simple correlation. If there exists a relationship or association among the variables (more than two variables) then correlation is called multiple correlation. The Karl Pearson coefficient of correlation varies from -1 to +1.When two variables are negatively correlated then the correlation is called negative correlation and the Karl Pearson coefficient of correlation is negative. When two variables are positively correlated then the correlation is called positive correlation and the Karl Pearson coefficient of correlation is positive. When there are no correlation two variables then it is called zero correlation and the Karl Pearson coefficient of correlation is zero. If the correlation coefficient between two variables is -1 then there exists perfect negative correlation. If the correlation coefficient between two variables is +1 then there exists perfect positive correlation. For instance, the relationship between price and demand of a product is negative, relationship between price and supply of a product is positive and relationship between risk and return of security is positive.

Table -14: Correlation Coefficient b/w DOL and ROI

	Variables	DOL	ROI
DOL	Pearson Correlation	1	.946**
	Sig. (2-tailed)		.004
	N	6	6
ROI	Pearson Correlation	.946**	1
	Sig. (2-tailed)	.004	
	N	6	6

Source: spss & **. Correlation is significant at the 0.01 level (2-tailed).

The table-14 reveals that the correlation coefficient between DOL (Degree of Leverage) and ROI (Return on Investment) is 0.946 which is statistically significant at 0.01 level of significant as significant level (p value =0.004) less than 0.01. Therefore ,it is observed that degree of operating leverage is significant positively correlated with the ROI .It means that degree of operating leverage of Bata India was at good position. It is suggested to Bata to continue its present operating leverage practice in future also.

Table -15:Correlation blw DFL and ROI

	Variables	DFL	ROI
DFL	Pearson Correlation	1	.195
	Sig. (2-tailed)		.712
	N	6	6
ROI	Pearson Correlation	.195	1
	Sig. (2-tailed)	.712	
	N	6	6

Source: SPSS.

The table-15 reveals that the correlation coefficient between DFL (Degree of Financial Leverage) and ROI (Return on Investment) is 0.195 which is statistically not significant at 0.01 level of significant as significant level (p value =0.712) more than 0.05. Therefore, it is observed that degree of financial leverage is positively correlated with the ROI .It means that degree of financial leverage of Bata India was not at optimum level. It is suggested to Bata to revise its capital structure which should include the optimum blend of equity and borrowed funds so that it has positive impact on Return on Investment.

Table16 –Correlation b/w ROI and DCL

	Variables	ROI	DCL
ROI	Pearson Correlation	1	.469
	Sig. (2-tailed)		.349
	N	6	6
DCL	Pearson Correlation	.469	1
	Sig. (2-tailed)	.349	
	N	6	6

Source: spss

The table-16 reveals that the correlation coefficient between DCL (Degree of Financial Leverage) and ROI (Return on Investment) is 0.469 which is statistically not significant at 0.01 level of significant as significant level (p value =0.349) more than 0.01. Therefore, it is observed that degree of combined leverage is positively correlated with the ROI but not significant statistically. It means that degree of combined effect of leverage of Bata India was not at optimum level. It is suggested to Bata to revise its capital structure which should include the optimum blend of equity and borrowed funds so that it has positive impact on Return on Investment.

VI. Conclusion

The Bata India is the largest retail firm and leader in the footwear Industry in India. The leverage analysis indicates the long term financial performance. The research study concentrates on relationship between leverage and profitability has reveals that the average of leverage ratio maintained by the Bata India is 2.95. Therefore, it is observed that the firm is not maintaining optimum operating leverage. The average financial leverage ratio maintained by the Bata India is 0.77. Therefore, it is observed that the firm is not maintaining optimum financial leverage. The average degree of combined leverage maintained by the Bata India is 2.30.Therefore; it is observed that the firm is not maintaining optimum level of combined leverage. A moderate financial leverage and low operating leverage is desirable the firm.

With regard to liquidity, the average of current ratio maintained by the Bata India is 1.5 which is less than standard norm of 2:1. Therefore, it is observed that the liquidity position of the Bata India Ltd is not satisfactory so the firm cannot meet its short term obligations effectively. The Quick Ratio of the firm was in mixed trend during the study period from 2006-07 to 2012-13. Moreover, the average of Quick ratio maintained by the Bata India is 0.25 which is less standard norm of 1.Therefore; it is observed that the liquidity position of the Bata India Ltd is not satisfactory so the firm cannot meet its short term obligations effectively.

With regard to financing policy, the average total debt capital employed by the Bata India was 8.43 percent over the total capital employed only. Therefore, it is observed that the firm is heavily depending on the shareholders funds to extent of 91.57 % for its capital requirements and utilizing very less borrowed funds nearly to the extent of 8.43 percent .Hence, the firm did not get leverage of borrowed funds which enhances the wealth of the shareholders. Moreover, the average of debt equity ratio maintained by the Bata India is 0.12. It is observed that Bata India used less debt capital than the equity funds and hence the firm can't get leverage benefits.

The total Assets turnover ratio of the firm was in mixed trend during the study period from 2006-07 to 2012-13. The average of Total Assets turnover ratio maintained by the Bata India is 2.86. Therefore, the firm did not utilize total assets effectively in generating the sales of the firm. It indicates that firm's management efficiency was not superior. The average of fixed Asset Turnover Ratio maintained by the Bata India is 8.11 times. The higher fixed assets turnover ratio is desirable for any firm. Therefore, the firm utilized the fixed assets effectively in generating the sales of the firm. It indicates that firm's management efficiency was superior. The average of Working Capital turnover ratio maintained by the Bata India is 11.6 times. The higher working capital turnover ratio is desirable for any firm. Therefore, the firm utilized working capital effectively in generating the sales of the firm. It indicates that firm's management efficiency was higher.

With regard to Profitability performance, the average ROI maintained by Bata India was 34.35 % during the study period from 2006-07 to 2012-13. The firm's overall efficiency is satisfactory as an Industry leader.

With regard to profitability and leverage relationship analysis, it is observed that degree of operating leverage is significant positively correlated with the ROI .It means that degree of operating leverage of Bata India was at good position. The degree of financial leverage is positively correlated with the ROI and statistically not significant. It means that degree of financial leverage of Bata India was not at optimum level. It is found that degree of combined leverage is positively correlated with the ROI but not significant statistically. It means that degree of combined effect of leverage of Bata India was not at optimum level. It is suggested to Bata to revise its capital structure which should include the optimum blend of equity and borrowed funds so that it has positive impact on Return on Investment. With regard to profitability performance, the performance of Bata is satisfactory but not with leverage as leverage is not maintained at optimum level.

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