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Financial Performance of Levered viz-a-viz Unlevered Firm: A Study in Indian Context

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Abstract—*Business runs smoothly depending on their adequacy of capital requirement in operating activities. Inadequate of its capital will force a firm to alter the existing capital structure by restructuring them according to the ratio of debt to equity. Our study examines the financial performance of levered and unlevered firm in Indian context. We selected 10 debt and debt free companies randomly from different sectors and collected one year data and perform the analysis. We used Portfolio performance measurement tools i.e., Jenson, Sharpe and Treynor to measure the performance of both the firms. After applying the performance measurement tool we draw conclusion that debt free companies perform better than debt companies.*

Keyword: *Performance, Portfolio, capital structure, Levered, Unlevered*

1. INTRODUCTION

In this research, we are evaluating the financial performance of levered viz-a-viz unlevered Indian firms and by which we conclude that which firm is riskier and which firm is profitable in respect to investor and shareholder. Business performance mainly defined by its capital requirement and capital structure. Restructuring of capital structure according to debt to equity is mainly done when there is inadequacy of its capital, which further force them to alter the current existing capital structure.

A levered firm is a firm which uses both debt and equity in its capital structure where as unlevered firm is a firm which only uses equity to finance its capital structure. Capital structure is very important and essential element which is used to run the business. It is one of the most critical issues because many other financial decision or variables are interrelated to it. The firm capital structure is mainly determined by the proportion each component of capital. Company's capital structure is measured through debt-equity ratio. There are mainly two types of companies exist levered or unlevered company. The company which uses both debt and equity are known as levered company and those who uses only equity is known as unlevered company.

The generally accepted financial theory says that Value of levered firm = value of unlevered firm + present value of tax Which further conclude that company has optimum capital structure. This paper examines both debt firm or unlevered firm and levered firm.

2. LITERATURE REVIEW

According to **Collins** and **sekely** (1983) business risk can bear its functions of the level of financial leverage firm. Kale et Al (1991) states that business risk or threat is one of the important principle of a firm's capital structure i.e. debt and equity.

Kim and **Sorensen** (1986) states that high operating risk or day-to-day risk firm uses more debt in comparison to less debt and vise-versa. They find out some related positive coefficient for the two main and commonly used measures of operating risk. Kale et Al (1991) also concluded and supported the increased relationship of business risk and financial leverage.

Korteweg (2009) concluded that his study is due to dividend pay on null leverage firms and others too. He also find out that to capture the benefits of leverage market exports them to level up in the future**.**

Shaikh & **Salman** (2010) identifies in slowdown leverage firms loose the edge but increase their returns rapidly and even it go to bankruptcy and made both shareholder and creditor suffers. In economic boom, debt companies are more beneficial and hence riskier than non-debt companies. But in recession, it is vise-versa. Because of that leverage companies are depending on the assumptions that economic boom will not goes to an end and make the company suffer from recession.

Erik Devos et al (2012) pointed out that the motivation and reward for firms being remain debt free or equity. They took three consecutive years sample of debt free firm by which, they found little support for the managerial establishment and flexibility. The result given by author was inferred to leverage firm for increasing decision of already levered firms.

Modigliani (1958) states that choice of capital structure has no connection to company's valuation. Here he find out that in an efficient market and in the absence of taxes, bankruptcy costs, a company's value will not be effected by how it is financed regardless of the fact that whether the companies is levered or unlevered what the dividend policy is. He mainly suggested that the firm optimally use low leverage and choose to return debt. These firms use debt to enjoy the benefit of tax.

Myers (1977) supports that physical asset has higher debt value as compared to virtual asset such as growth rate, bank rate etc. Myers also states that manager should prefer to issue levered over unlevered when manager suggest owner manager than he/she use outsiders money this is done only when financial availability is insufficient for making profit. Finally, according to Myers theory debt is likely selected over equity in smaller and private companies.

Titman and **Wessels (**1988) pointing that any capital structure i.e. debt or equity all are done for the cost of object and the benefit comes from it but in one thing they find themselves failed i.e. they failed to prove the earning of growth volatility. There also indicate that firm capacity or size has going to effect on capital structure.

Riddiough (2004) is not agreed with MM theory but he told that perfect collaboration of capital structures will reduce weighted capital cost same as transaction cost. In support of inclination, Riddiough suggest on the optimal capital structure i.e. debt and equity supplemental capital structure is allowed to leverage. Transaction cost and risk which was used in capital structure are the major success factor by him. Hence, Riddiough indicates that equity would still be favorable.

3. RESEARCH OBJECTIVE

Examine the Financial performance of levered and unlevered firm using portfolio performance measure in context of Indian company. In this research we will measures the performance of these companies and draw the conclusion which one is better and which one is less risky for the capital structure of the firm.

4. RESEARCH METHODOLOGY

Data Collection

This research paper follows descriptive method for our research project for finding performance of levered and unlevered firm. The research is done on the basis of secondary data of 10 debt and zero debt companies closing prices of every working day of NSE (National Stock Exchange).

Data Analysis

The analysis is based on one year working days closing prices of every company for debt and zero debt companies i.e. from 1-1-2015 to 31-12-2015. And the closing dates are same for every company of the particular firms. And with the use of that we find the daily lognormal returns for each and find the average return, variance and the standard deviation of the above calculated daily returns are also determined. These daily average returns, variance and standard deviations are then annualized for each company by multiplying their value with the total number of the working days in the year.

Now with the use of annualized return, variance and standard deviation we find the weighted portfolio return, variance and standard deviation. Also we find weighted portfolio beta by using return of same working days closing prices of NSE (national stock exchange). And here we put our risk-free rate of return to be 7% approx. (by help of previous data and RBI rates).

The portfolio variance, portfolio return, portfolio standard deviation and portfolio beta (measure of overall risk of the portfolio) are then calculated by using the following matrix multiplication formulae:

$$r = \log (P_{t} / P_{t-1})$$

$$\mathbf{r_p} = [W_1 \quad W_2] \text{ X } \begin{bmatrix} r_1 \\ r_2 \end{bmatrix}$$

$$\boldsymbol{\sigma^2} = \frac{\sum (x - \mu)^2}{N}$$

$$\boldsymbol{\sigma^2_p} = [W_1 \quad W_2] \text{ X } \begin{bmatrix} \sigma_1^2 & Cov(r_1, r_2) \\ Cov(r_1, r_2) & \sigma_2^2 \end{bmatrix} \text{ X } \begin{bmatrix} W_1 \\ W_2 \end{bmatrix}$$

$$\boldsymbol{\sigma} = \sqrt{\sigma^2}$$

$$\boldsymbol{\sigma_p} = \sqrt{\sigma_p^2}$$

$$\mathbf{Cov(r_1, r_2) = \rho_{12} \sigma_1 \sigma_2}$$

$$\beta = \frac{Cov(r_1, r_2)}{Var(r_2)}$$

$$\boldsymbol{\beta_p} = [W_1 \quad W_2] \text{ X } \begin{bmatrix} \beta_1 \\ \beta_2 \end{bmatrix}$$

Finally for finding the performance of levered and unlevered firm we use the above matrix multiplication formulas which were used in finding portfolio Performance Measures i.e.

Treynor Measure: $\frac{r_p - r_f}{\beta_p}$

Sharpe Measure : $\frac{r_p - r_f}{\sigma_p}$

Jensen Measure : $r_p - [r_f + \beta_p (R_M - r_f)]$

Note:

$\mathbf{r_p}$ is the portfolio return

$\boldsymbol{\sigma^2_p}$ is the portfolio variance

$\boldsymbol{\sigma_p}$ is the portfolio standard deviation

W are the individual weights of the company in the portfolio.

$\boldsymbol{\sigma^2}$ are the average annualized variances of a particular company.

r are the returns between latest and previous price of company.

$\mathbf{Cov(r_1, r_2)}$ is the covariance between two companies.

$\boldsymbol{\sigma}$ are measures of standard deviations of the individual company.

$\boldsymbol{\rho_{12}}$ is the correlation coefficient.

$\mathbf{r_f}$ is the risk-free rate of return

$\boldsymbol{\beta_p}$ is the portfolio beta

$\mathbf{R_M}$ is the return of market

5. RESULT & FINDING

In this paper, with the help of weighted annualized return, variance and weighted portfolio beta we use to find the performance between the two firm i.e. zero debt company and debt company. Here, we use total weight age equals to 1. And after various calculations and performance measure tool we got some findings about the two firms which clarifies that which firm's performance is good on a respective time interval.

Here, in table 1 shows that weighted portfolio variance, standard deviation and beta of debt firm is higher than zero debt firm where variance measures the spread between number in a data set, and beta measures the systematic risk which clarifies that zero debt firm is less risky than debt firm. And the return in zero debt firm is 11.79% which is higher than debt firm that is -6.7%.

Table 1: Average annualized values of both the firm

	Zero Debt Company	Debt Company
Portfolio Variance	0.000021	0.084756
Portfolio Standard Deviation	0.004576	0.291130
Portfolio Return	0.117859	-0.067009
Portfolio Beta	0.677626	0.987383
Market return	-0.018146	-0.018146
Risk free rate of return	0.07	0.07

Table 2, shows the portfolio performance measure where we see that treynor and sharpe measure of zero debt company is 7.06% and 10.45% respectively which is higher than debt companies performance that is -13.88% and -0.47% respectively. And Jensen measure shows the risk which shows that zero debt company which has high risk of 1% as compare to Debt Company which has -2% risk. Academically we studied that "the more risk we put more return come". And we found out here that for zero debt company risk is high and return is also high for the same company which practically proves the above statement.

Table 2: Performance of both type of firm using portfolio performance measurement tool

	Zero Debt Company	Debt Company
Treynor Measure	7.06%	-13.88%
Sharpe Measure	10.45	-0.47
Jensen Measure	1%	-2%

So, finally outcome of our descriptive research paper shows that debt free companies performing better as compared to debt companies by applying performance measure tools i.e. Treynor, Sharpe and Jensen.

6. RECOMMENDATION

Finding of this paper suggested that for investors and managers, to go with the zero debt firms which definitely had high risk but still it had high return too and in mean time they also select the combination of both types of capital structure i.e. debt and equity. And the same for every type and size of investors who wanted to invest and earn money from their investments. And for debt based capital structure it is recommended that banks may release some schemes and tariffs for startups which should run profitably and by which investor and bank both benefited by it.

7. LIMITATION

This paper is based on finding performance of levered and unlevered firm on the basis of one year data which may differ the performance if we consider more than one year data because the market is not efficient. So, this may change with the change of size of the data.

Another, limitations is that scope of study which is confined only to 10 companies but result may differ if we consider more companies. So, here also result may differ with the change of size of companies.

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8. APPENDICES

List of Companies

Levered Firm:	Unlevered Firm:
1. HCL Technologies Ltd.	1. Bajaj Corp. Ltd.
2. Hindalco Industries Ltd.	2. Gillette India Ltd.
3. JK Papers Ltd.	3. CRISIL Ltd.
4. Maruti Suzuki India Ltd.	4. Hindustan Zinc Ltd.
5. Prism Cement Ltd.	5. IFSL Ltd.
6. Tata Consultancy Services Ltd.	6. Infosys Ltd.
7. Tata Steel Ltd.	7. Nesco Ltd.
8. TVS Motor Co Ltd.	8. Oracle Corporation
9. Wipro Ltd.	9. Whirlpool Corporation
10. Zuari Agro Chemicals	10. ACC Ltd.