The Effect of Leverage on Shareholders' Return: An Empirical Study on Some Selected Listed Companies in Bangladesh

Md. Abdullah Al- Hasan[1*] Anupam Das Gupta[2]

1. Lecturer, Department of Finance and Banking, University of Chittagong.

2. Assistant Professor, Department of Finance and Banking, University of Chittagong.   Email: anupam@cu.ac.bd.

* E-mail of the corresponding author: hasan14882@yahoo.com

Abstract

Financial plan is one of the vital decisions of a firm because a financial plan affects the market value, cost of capital and shareholders return of a firm. The Proportion of Debt to Equity in the financial plan of a firm is called leverage. Since optimal debt ratio influences a firm's market value and shareholder's return, different firms use different debt ratio at different levels to maximize market value and shareholders return. Numerous researches have been conducted over the years on these issues. Most of these empirical studies have been conducted on developed countries perspective. This study aims to investigate the effect of leverage on shareholders' return i.e. Shareholders' return in the form of EPS of some listed companies under four industries in Bangladesh. The study identifies the relationship between leverage and EPS. A simple regression model has been used for the pooled data of the selected listed companies in Bangladesh considering debt ratio as independent variable and EPS as dependent variable. The study results reveal leverage has statistically significant effect on the shareholders' return and proper management of leverage can maximize the value of EPS

Key words: Leverage, EPS

1.1 Introduction

The financing decision is a significant managerial decision for a company. It influences the shareholders' return and risk. Consequently the market value of the share may be affected by capital structure decisions. A demand for raising the funds leads a firm to restructure the existing structure since decisions of capital structure has to be revised considering the amount and forms of financing. The new financing decisions of the company may affect its debt –equity mix. The debt-equity mix has implications for the shareholders' earnings and risk. Thus the leverage provides the potential of increasing shareholders' earnings as well as creating the risks of loss to them. It is a double edged sword. The following statement provided by I M Pandey very well summarizes the concept of financial leverage:

"The lower the interest rate, the greater will be the profit, and the less the chance of loss; the less the amount borrowed, the lower will be profit or loss; also, the greater the borrowing, the greater the risk of unprofitable leverage and the greater the chance of gain."

The role of leverage in magnifying the return on the shareholders is based on the assumptions that the fixed charges fund can be obtained at a cost lower than the firm's rate of return on net assets. Thus when the difference between the earnings, generated by assets financed by the fixed charges funds, and costs of these funds is distributed to the shareholders, then EPS increases. It should be clear that EPS is the important figure for analyzing the impact of leverage. So, the researchers want to justify whether the leverage effect the shareholders' return or not practically by an evaluative study.

1.2 Review of Literature

Several studies have been conducted on capital structure by different scholars in different period of time. The

correlation between Debt to equity ratio (D/E) ratio and all profitability ratios is strongly positive (Balasundaram & Nimalathasan, 2010). Leverage of privatized firms are negatively related with the profitability, resulting more profitability of the firms with low leverage (Bachiller and Arcas ,2006). There is a negative relationship between the ratio of long-term debt to total assets and ROE. With regard to the relationship between total debt and rate of return, there is a significant positive relationship between the ratio of total debt to total assets and return on equity. Profitable firms depend more on debt as their main financing option (Abor, 2005). Changes in capital structure do not affect firm value and there is no significant relationship between the changes in debt ratios and the changes in value (Carpentier ,2006). There is a strong positive correlated association between value of the firm and capital structure (Chowdhury and Chowdhury, 2010). Leverage affects cost of capital, ultimately influencing firm's profitability and stock prices (Higgins, 1977; Miller, 1977; Myers, 1984; Sheel, 1994). A balancing theory of optimal capital structure between tax advantages of debt and cost of debt leads to maximize the value of firms (Modigliani and Miller, 1958). Furthermore, when both taxes for corporate and equity holders were considered at the same time, financial leverage appeared not to bring significant benefits to the investor at the end (Myers, 2001). Although this is difficult to explain under the agency cost or tax shield trade off theory, the most profitable firms in many industries often have the lowest ratio, which is different from predictions using trade-off theory (Sunder and Myers, 1999).

In contrast to the trade-off theory, the packing order theory of capital structure states that firms have a preferred hierarchy for financing decisions. The highest preference is to use the internal financing such as retained earning, before resorting to any form of external financing. If a firm uses an external funding, the order of preference is debt, convertible securities, preferred stock and common stock (Myers, 1984). This order reflects the motivation of a financial manager to reduce the agency costs of equity, retain control of the firm and avoid the seemingly inevitable negative market reaction to an announcement of a new equity issue (Hawaini & Viallet, 1999). Highly profitable firms have lower levels of leverage than less profitable firms because they first use their earnings before seeking outside capital. In addition, stock price reflect the how the firms perform. Firms tend to issue equity rather than use debt when their stock price increases, that their leverage levels stay lower than firms using debt (Titman and Wessels, 1988).

Leverage and counting beta are directly related to the systematic risk (Bowman, 1989). Highly levered and less highly levered firms show a stronger negative relation according to stock returns. The financial leverage is the most significant issue which establishes the firm's risk premium (Zimmer, 1990). Stock volatility in terms of returns is too high in equity that would raise the D/E ratio. Therefore, the future volatility increases according to the raising riskiness of the firms (Yaushaun, 1976).

1.3 Objectives of the study

The principal objective of the study is to evaluate the effect of leverage on shareholders return of some selected listed companies in Bangladesh. To accomplish this objective following specific objectives have covered:

i. To measure the long term financial solvency of the selected firms

ii. To examine the earning capacity of the selected companies

iii. To highlight the relationship between leverage and shareholders' return

iv. To evaluate the dependency of leverage on shareholders' return

1.5 Hypotheses of the study

Hypothesis is the statement that shows the inferred relationship among different variables. The conjectured relationships between the variables are established on the basis of available literature. These relationships can be verified using certain statistical tests or techniques. These hypotheses may be substantiated or not, depending upon the results derived from statistical analysis. The following hypotheses have been developed and tested against the objectives set forth above:

Ho: There is no significant effect of leverage on shareholders' return

H$_1$: There is a significant effect of leverage on shareholders' return

1.6 Methodology of the study

1.6.A Data collection technique

This study is based on the secondary data. This study covers four industries –Automobile, Cement, Textile and Pharmacy. Total 28 companies have selected 7 companies from each industry for the period of 2005 to 2009. The study based on secondary data and annual report of each company collected as a source of secondary data.

1.6.B Data Processing and Analyzing technique

SPSS 17.0 and Excel have been used to analysis and process the data. Dependent and independent variables are analyzed by using correlation and linear regression. Statistical tools like Regression analysis, T-test and F-test have been used to assess and interpret data. Regression analyses have been used to analyze the relationship of leverage with earning per share of companies. F-tests have been performed to test the statistical significance of the parameters at 5% level of significance.

1.6Ba Specification of the models

The sample of the study is trimmed applying a methodology to test the effect of financial leverage on shareholders return by simple regression analysis using least square estimation method. Assumption on which least square estimation method is based include a) relationship between dependent and independent variables is linear, b) residual term to be normally distributed with zero expectation, not correlated with independent variables and have constant variance. According to these empirical models, shareholders returns are affected by the variables shown in these following equations:

EPS = $\alpha + \beta_1 L + \varepsilon$ ………………… (Equation-1)

Where,

EPS= Earning per share

L=leverage

$\acute{\alpha}$ = Constant term of the model

β= Coefficients of the model

ε= Error term

Dependent variables

Earning per share (EPS):

EPS is calculated by dividing net income by the number of shares outstanding.

Independent variables

Leverage (L):

There is no thump rule of defining leverage in the academic literature. Depending on the objective of the analysis, specific definitions are made by researchers. In the light of Rajan and Zingales (1995) Leverage can be defined following ways:

i.   Leverage is the ratio of total liabilities to total assets.

ii.   Leverage is the ratio of total debt to net assets, where net assets are total assets less accounts payable and other current liabilities.

iii.   Leverage is the ratio of total debt to capital where capital is defined as total debt plus equity.

iv.   Leverage is the ratio of total debt (both short term and long term) to total assets.

So leverage is debt ratio which is measured by dividing the total debt (both short term and long term) by the total assets. The Table-1 shows the descriptive information of variables.

Table 1

Descriptive information of Variables

Variables	Number of observations (N)	Minimum	Maximum	Mean	Std. deviation
Dependent Variable					
EPS	28	-65.47	182.59	21.08	44.78
Independent Variable					
Leverage	28	.26	1.27	.64	.21

Source: Data are gathered from the annual report of concerned companies.

Table 1: Summary of Descriptive variables

In addition to these two regression analyses, the coefficient of determination (R^2) also used to analysis the variance and to justify the accuracy of the models developed in this study.

The study has also used adjusted coefficient of determination (AR^2) to justify whether the value of R^2 is increased for using the two independent variables. The study has tested individual coefficient by using t-test at the 5% level of significance. The way the alternate hypothesis is stated indicates that the test is two tailed.

Even though, the least square method has the ability to draw the inferences about the relationship for an entire population, the study have tested the ability of the independent variables to explain the behavior of the dependent variable by using a global test that is called F-test.

Averages, standard deviation, correlation, beta regression analysis, coefficient of determination, F-test and t-test have been calculated by using SPSS 17.0 for windows.

2.0 Findings and their analysis

2.1 Borrowing capacity or long term financial solvency

The long term financial solvency of the some listed companies under different industries in Bangladesh is explained by the table-2.

Table-2

Results showing the average debt Ratio

Year	Auto	Cement	Textile	Pharmacy
2005	0.714112	0.642355	0.670143	0.490367
2006	0.649079	0.643222	0.677983	0.501889
2007	0.735674	0.697383	0.673711	0.526082
2008	0.683494	0.735987	0.702317	0.530586
2009	0.67693	0.689228	0.634013	0.529123
Average	0.691858	0.681635	0.671633	0.515609
Standard deviation	0.033682	0.039618	0.024514	0.018317

Table 2: Summarized financial information of financial leverage

The long term financial solvency or borrowing capacity or credit worthiness of all industries in the mentioned period was not good because the use of debt in total assets was more than the owner's equity. The average of this ratio as shown is more than 60% for Automobile, Cement and Textile industries but 51% for the Pharmacy industry which is more than the standard. The borrowing capacity of Pharmacy industry is better than other industries. The financial risk of Pharmacy industry is lower than other industries because the standard deviation of leverage for this industry is lower than other industries. The financial risk of Automobile industry is higher than other industries because the standard deviation of leverage for this industry is higher than other industries.

2.2 Earning capacity

The earning capacity of the listed textile companies in Bangladesh is explained by the table-3.

Table-3

Results showing the Earning per Share

Year	Auto	Cement	Textile	Pharmacy
2005	-6.23571	13.7	13.76143	50.95
2006	2.264286	19.86714	14.41857	46.89286
2007	-7.07857	26.06	15.6	35.60857
2008	4.792857	14.38	12.27571	40.99
2009	37.98	39.39143	9.94	36.01714
Average	6.344571	22.67971	13.19914	42.09171
Standard deviation	18.42757	10.58464	2.181858	6.739168

Source: Annual Report of 7 listed companies from each industry.

Table 3: EPS of Each industry for the period of 2005-2009.

The earning capacity of all industries is good because the average EPS of each industry is positive. The earning capacity of Pharmacy industry is better than other industries. The risk of Pharmacy industry is lower than other industries because the standard deviation of leverage for this industry is lower than other industries. The risk of Automobile industry is higher than other industries because the standard deviation of leverage for this industry is higher than other industries.

2.3 Relationship between leverage and shareholders return

The study has identified the magnitude of the relationship between shareholders return and leverage. This relationship is shown by correlation coefficient matrix. Table-4 shows the correlation coefficient matrix

Table-04

Correlation coefficient between leverage and EPS

		EPS	L
Pearson Correlation EPS L		1.000 -0.475	-0.475 1.000
Sig. (1-tailed) EPS L		.005	.005

Table 4: Compiled data depicting the correlation coefficient between Leverage and EPS

From the analysis of correlation coefficient the study has identified that the relationship between leverage and shareholders return is negative because the correlation between L and EPS is -.475 and the result is significant at lower than 1% level of significance. The result of correlation supports the relevance theory of leverage or capital structure.

2.4 Dependency of shareholders return on leverage

The results of the regression analysis related to hypothesis drawn on shareholder's return are presented by table-5

Table-5

Regression analysis results-Shareholder's return (EPS)

	α and β	Std. Error	t-stat	Level of sig.	R^2 (Adj. R^2)	F-stat with (sig.)	VIF
EPS		18.490			.226 (.196)	7.576 (.011)	
Constant	84.965	9.646	3.479	.002			
Leverage	-99.793	12.301	-2.752	.011			1.000

Table 5: Statistical analysis of summarized financial information of return and leverage

From the analysis of the effect of leverage on the shareholder's return the study has found that whenever the companies do not use the debt instruments in the capital structure then the EPS is TK 84.9654 as explained by intercept (α)=84.965. When the companies use debt in the capital structure then the EPS is decreased by TK 99.793 because slope (β_1) = -99.793. Both the constant and the coefficient are significant at less than 5% level of significance.

The model developed for EPS is not strong enough because Coefficient of determination (R^2) = 0.226. It can be said that the EPS depends upon the financial leverage by 22.6% and other variables by 77.4%. The result of the model is not biased by the independent variables because adjusted coefficient of determination (AR^2) =0.196 which is nearer to the value of R^2 and less than 1.

But it is noteworthy that the sign of beta for the leverage and EPS is negative; meaning that the more the debt ratio the lower the EPS of these firms.

From the F test statistics there is no significant evidence to accept the null hypothesis. So, the study has found that there is a **significant effect of leverage on shareholders return (EPS)** and the result supports the relevance theory of capital structure or leverage.

3. Summary and conclusion

3.1 Summary

This study has investigated the relationship between leverage and shareholders' return. EPS and debt ratio measures are examined. It is hypothesized that there is a significant effect of leverage on the shareholders' return. The regression model has shown that there is a negative relationship between the EPS and leverage. The result has also indicated that highly leveraged companies under different industries are risky in EPS due to negative relationship shown by regression model. The study has proved there is a significance effect of leverage on EPS which supports the relevance theory of the capital structure.

3.2 Conclusion

This study focused basically the relationship pattern of EPS and leverage and shows the importance of leverage in stockholders returns that intern effect the wealth maximization goal of a firm. The study depicted leverage is the prime factor that should consider while objective of the firm i.e. wealth maximization is consider as important goal for the firm. So leverage is an indispensible factor for stockholders return. The study used one independent variable and data for five years. There are various factors affecting firm's shareholders' return such as tax rate, growth opportunities, assets performance, employees' contribution, technical knowhow, probability of bankruptcy and so on. There is a large no. of listed companies under different industries in Bangladesh. This study may therefore lacks in revealing complete forces of variables in EPS. This study covers few listed companies based on which data; it reveals that leverage significantly effect on stock holders return. Above mentioned study does not cover analyze the EPS on other factors including leverage in listed companies which creates an opportunity to deal with through investigation.

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