

CAPITAL STRUCTURE AND EPS: A STUDY ON SELECTED LISTED HEALTH CARE SETUPS IN INDIA

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ABSTRACT

The main objective of this study is to find out the impact of capital structure on earnings per share (EPS) in selected healthcare setups listed on different stock exchange of India. To attain this objective, a proven scientific methodology and adopted parameter with the previous research studies have been used and explore. The study employs statistical method of correlation and regression model approach to test the operational identified hypotheses. The results revealed that Equity and debt ratio have a Positive association means correlation with EPS, whereas leverage ratio has a positive association as well as association ship with debt ratio is also positive, but results revealed that the association ship or correlation is negative with equity ratio. In addition, capital structure ratios have an impact which is approximately (R2) 95% on EPS at 0.05 significant levels. This study can be taken as a case study and example for the benefit of the different stakeholders of healthcare setups and academicians to explain the capital structure theory.

KEYWORDS: Capital Structure, Indian Stock Exchange, Capital Structure Ratios, Health Sector, EPS.

Introduction

Capital structure and firms value is a key concept in the modern capitalist economy. Many Hospitals and medical services are listed in stock market for their financial needs. This recently growing industry has lot of scope of growth due to need and high intellectual capital availability. India is focusing on Medical tourism for their expansion and improvement for quality. Investors have good expectations about the return. Hospitals and medical services have lot of promoters available now. External business environment of these sectors considered to be good for their growth.

This sector has attracted several private equity players, who have been playing a significant role in various strategies of investment trading for Indian hospitals, including organic & inorganic growth. Investor's expectations are directly related to EPS and Risk involved. Capital structure provides a base for EPS, Value of the firm, return and scale of the risk. This study will try to explain the related parameters of financial strategies and establish a framework for optimum capital structure of Hospitals and medical firms. Indian Healthcare industry contributes~4% to the Gross Domestic Product (GDP). The Indian healthcare sector consists of Hospitals, Pharmaceuticals, Medical equipment and supplies, Medical insurance and Diagnostics. Within the industry in India, Hospitals and healthcare setups is the largest segment contributing about 70% of the industry revenue followed by Pharmaceutical at13% of the

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total revenue and others contributing allied activities are contributing 17%. This industry is having maximum diversity in their operation, origin and management. It is highly fragmented with about 90% of hospitals run as a single unit of professional doctors as a small clinic and small trust and the balance are being managed by corporate hospitals chains and managed by corporate houses such as (Apollo Hospital, Fortis Healthcare, etc.).

India, despite being the second most populated country with high density of population with high polluted water supply and sharing close to 20% of the global disease burden, lacks in proper healthcare infrastructure especially in rural India. In cities also there are lot of slums without having proper infrastructure and cleanliness. India holds just 6% of the global beds and 8% share of doctors and nursing staff in the world. Further, India has just 9 beds per ten thousand people which is significantly lower than the global median average of 30 beds per ten thousand people indicating huge demand for healthcare sectors.

It is believing that with rising population, awareness towards health and efficient economy will try to facilitate the need of improve healthcare infrastructure which may come into the forefront in the government agenda in near future and may be promotional help can be facilitated to the privately-owned healthcare setups. This indicates a huge opportunity for hospital chains which is in the process capacity expansion not only in urban areas but in the Tier - II and Tier -III cities as well. Capital structure refers to the different source of funds options used by a firm in financing its assets (Bhaduri, 2002).

Bevan and Danbolt (2001) also highlights "company size, profitability, tangibility, growth opportunities, non-debt tax shields and dividend as possible determinants of the capital structure choice". This study is important due to tangibility is considered as determinant of capital structure. The focus of this study is to discuss these factors influencing the capital structure of listed companies for sake of market behavior towards different determinant of capital structure. This is overbearing as the corporate sector in India is characterized by many firms operating in a largely deregulated and increasingly competitive environment but now regulation is enforcing in Indian financial market and focused on corporate governance.

Research Problem

Substantial parts of the literature concerning capital structure have dealt with issues relating to capital structure ratios. These ratios have been analyzed in many ways. This research problem will also be dealt with these ratios in a new manner. This research attempts to investigate and analyze the relationship and association ship between capital structure and Earning Per Share (EPS) of the healthcare setups listed in different stock exchange in India.

Objective of Study

This research attempts:

- To identify the optimum capital structure of the healthcare setups listed on Indian stock exchange.
- To identify the relationship or association ship between the capital structure and EPS.

Review of Literature

There are several study and research had been carried out in past to analyse the capital structure and relation to the EPS. In which important research was:

Taub (1975) tried to ascertain "the factors influencing a firm's choice of a debt equity ratio". It was carried out in United states where 89 firms were selected as random sample. The study was used ten years data of selected firms. As a statistical test, likelihood ratio statistics and t test were used for the hypothesis testing. In India, Bhat (1980) carried out a study to analyze the different determinant of leverage especially financial leverage and to find the association ship between the leverage ratio and firms characteristics indicators such as growth, profitability, firm size, dividend payouts, fluctuation in income and debt services through statistical method of Correlation and regression.

In 1983, Venkatesan attempt to establish the relationship of certain exogenous variables such as market factors and legal constraint with the financial leverage in Indian financial system.

Venkatesan used the data of four years of selected sample of 66 firms of different industries for a time period of four year from 1977 to 1980 from India. He attempted to analyze the impact of seven different variables on financial structure means pattern of financing of firms by using the statistical multiple regression model, correlation and t-test. The study was ascertaining that null hypothesis proposed in the study that size does not have any relationship with financial leverage could not be

rejected for any of the industries because sample was taken from all industry of India including banking, manufacturing, textile etc.

In last eighties, Titman and Wessels (1988) used a factor analysis technique, advance tool for confirmatory analysis first time for estimating and measuring the impact and association ship of unobservable attributes or factors on the choice of corporate debt ratio using the sample data 469 United Kingdom's firms for the period of nine years from 1974-82. In India, Chandrakumarmangalam and Govindasamy (2010) try an attempt to investigate the relationship between leverage (financial leverage, operating leverage and mixed leverage) and earnings per share (EPS) by using the data from seven public limited cement companies listed in Indian stock market for a period of eleven years from 1997 to 2007 in recent.

The result of study found that there is significant relationship between DFL and EPS, DCL and EPS and DOL and EPS in listed cement industry. The study also find that leverage have significant impact on the profitability of the firm and the wealth of the shareholders can be maximized in terms of EPS, when the firm can employ more debt means with the increasing leverage. Another research and study in India, Rani (1997) in her Ph.D. thesis employed backward multiple regression model to measure and explore significant variables affecting capital structure by the considering leverage ratio as dependent variable. Another significant study of Kakani and Reddy (1998) try to find out the major determinants of the capital structure for 400 firms for a period of 11 years from 1985 to 1995 by using most favorable statistical tool, correlation and multiple regression. The study has analyzed measure of short-term and long-term debt apart from an aggregate as whole measure of total debt.

Samarakoon (1999) try to find out the determinants of leverage in a cross section of listed companies in Sri Lanka a neighboring country having high impact of Indian financial system, using a sample of firms listed in the Sri Lanka Stock Exchange. The results indicate that the use of long term debt is relatively low due to less capital availability in public due to unmaturing market.

In India, Impact on firm's leverage ratio, Shah and Khan (2007) have applied two major variants of panel data analysis a rigorous statistical method to find out the determinants of capital structure of KSE listed non-financial firms from the recent economic reformed Indian scenario for the period 1994-2002. Another important statistical tool, Pooled regression analysis was also applied with the assumption that there were no industry or time effects and by using fixed effect dummy variable in the regression, the coefficients for many industries were significant showing there were significant industry effects, hence, the study has accepted the latter model for analysis for another important research.

India is a developing country and may be a different situation can be appeared in impact of capital structure, so, Singh (2011) have analyzed the capital structure practices of developing countries through and emphasis on Indian economic scenario, a study of Indian Corporate sector by segmenting the capital structure of a sample of 298 out of top 500 manufacturing companies for a period of eleven years after post privatization and linearization policy commencing from 1995-1996 to 2005-06. Another important study of Srivastava (2012), the determinants of capital structure in Indian Pharmaceutical companies for the pre-and post-liberalization period extended over the years from 1977-78 to 2006-2007, a 30 year of data using regression analysis, Jargue-Bera (JB) test, chow test, t-test and F test.

The regression analysis for the total period shows cash ratio and firm size to be the only significant variables at the 5 percent level. In the pre-liberalization period, i.e., 1977-78 to 1991-92, profitability, non-debt tax shield and asset structure are the significant variables although profitability and asset structures are significant with the negative signs.

Methodology

At present, in Indian stock exchanges, have about 30 healthcare setups are listed.

The sample selected includes all health sectors institutions listed and the number of the sample consists of five companies which are from hospitals, Pathology and Clinical segment. The five year data from 2011–2016 are used for this study. Selection criterion is based on the availability of the data. The secondary data were collected for the study during the period of five years (2011 -2016) and the data used for the empirical analysis was derived from the data base maintained by different stock exchange and numbers of financial consultancies. This data base contains balance sheet, profit and loss account and investor guide.

The data were averaged over five years to smooth the variables. While Titman and Wesseles (1988) used three-year averages, while, Rajan and Zingales (1995) had used five year averages.

Following Rajan and Zingales, this study used five year averages and some required data were taken from online (official website of different stock exchange of India and some are from the financial literature of concerned firm and Industry.

Further, annual reports of the companies, books, journals, magazines, and research reports were also used for data collection. In this study, various statistical methods have been employed to analyze data collected from five companies listed in NSE and BSE etc. A well know statistical package called Excel Analysis Tool has been used to analyze the data researcher collected.

The upper level of statistical significance for hypotheses testing was set at 5%. All statistical test results were computed at the 2-tailed level of significance. In this research, Statistical analysis involved both descriptive and inferential statistics. According to research objective and research questions, this study has set the variables and their measurement is largely adopted from existing literatures and convention of financial study.

The following table shows the variables and their measures. Table 1: Operationalization Concept _Variables _Indicators _Measurement _ _Capital Structure _Equity Ratio (ER) _Total Equity / Total Assets _Ratio _ _Debt Ratio _Debt / Total Asset _Ratio _ _Debt to Equity Ratio _Debt/ Equity _Ratio _ _Value of the Firm _EPS _Net income / No of Equity shares _Ratio _ _ The general form of the panel data model can be specified more compactly as follows: $Y_{it} = a + \beta X_{it} + e_{it}$ The subscript ire presenting the cross-sectional dimension and t denoting the time-series dimension.

The left hand Variable Y_{it} , represents the dependent variable in the model and X_{it} contains the set of independent variables In the estimation model, is taken to be constant overtime t and specific to the individual cross-sectional unit i. If a is taken to be the same across units, ordinary least squares (OLS) provides a consistent and efficient of a and β .

Researchers use multiple regression model to test the impact of independent variables on dependent variable. $EPS_{i,t} = \beta_0 + \beta_1 ER_{i,t} + \beta_2 DR_{i,t} + \beta_3 LR_{i,t} + e$ Where; $EPS_{i,t}$ - ratio of net income to number of equity shares for firm i in period t $\beta_0, \beta_1, \beta_2, \beta_3$ - Model coefficients $ER_{i,t}$ - ratio of total equity to total assets for firm i in period t $DR_{i,t}$ - ratio of long term debt to total assets for firm i in period t $LR_{i,t}$ - ratio of debt to equity for firm i in period t and ? - Error term. The following hypotheses have been developed for testing.

- H_1 : There is a negative relationship between the equity ratio and earnings per share.
- H_2 : There is a positive relationship between the debt ratio and earnings per share.
- H_3 : There is a positive relationship between the debt to equity ratio and earnings per share.

Empirical Results

Descriptive Statistics

Table 2 provides a summary of the descriptive statistics of the dependent and independent variables and shows the average indicators of variables computed from the financial statements.

Table 2: Descriptive statistics of Dependent and Independent Variables

	EPS	D/E	ER	DR
Mean	9.88	0.436186477	0.811818192	0.188184461
Standard Error	4.804627977	0.101575538	0.062749213	0.062753354
Median	10.72	0.424297314	0.784605139	0.215429913
Mode	#N/A	#N/A	#N/A	#N/A
Standard Deviation	10.74347476	0.227129808	0.140311506	0.140320765
Sample Variance	115.42225	0.05158795	0.019687319	0.019689917
Kurtosis	1.10817485	-0.179252063	0.477277806	0.477295066
Skewness	0.929837619	-0.611782859	-0.023716711	0.023218611
Range	28.14	0.575037981	0.379931026	0.379957665
Minimum	-1.59	0.104107837	0.620042335	0
Maximum	26.55	0.679145818	0.999973361	0.379957665
Sum	49.4	2.180932386	4.059090958	0.940922307
Count	5	5	5	5
Confidence Level (95.0%)	13.33978583	0.282018905	0.174219746	0.174231242

According to the table, the mean values of ER, DR, LR and EPS ranged from a low of 0.21 to a high of 4.8. The mean equity of the healthcare setups is 0.21 which means around 21 per cent of the total assets consists of equity.

The average of debt ratio suggests that it represents approximately 18 percent of the capital measured by total assets. The mean D/E Ratio is 0.43 with standard deviation of 0.10 and minimum of 0.10 to a maximum of 0.67. The average earnings per share (EPS) is 9.88 which were measured by net income/number of shares.

• Correlation and Regression Analysis

The results of regression, three (03) indicators of capital structure (independent variables) measuring name is debt equity ratio, equity ratio and debt ratio. against the dependent variable as earning per share (EPS) are shown below.

Table 3: Correlation Matrix

	EPS	D/E	ER	DR
EPS	1			
D/E	0.383954	1		
ER	-0.51089	-0.79243	1	
DR	0.510853	0.792516	-1	1

The multiple regression analysis is carried out to investigate the simultaneous impacts of all the independent variables on the dependent variable. The results of regression, three (03) indicators of capital structure (independent variables) against the dependent variable are shown below.

Table 4: Regression Model Results (dependent variable: earnings per share)

Regression Statistics								
Multiple R	0.978306021							
R Square	0.957082671							
Adjusted R Square	0.828330685							
Standard Error	4.451343465							
Observations	5							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	3	441.8745	147.2915	7.433537	0.261872			
Residual	1	19.81446	19.81446					
Total	4	461.689						
	Coefficients	Standard Err	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1699891.828	422439.3	4.02399	0.155065	-3667709	7067492.7	-3667709	7067492.68
D/E	239.0275186	62.17366	3.844514	0.162002	-550.964	1029.0187	-550.96371	1029.01875
ER	-1699952.47	422455.2	-4.02398	0.155065	-7067754	3667849.4	-7067754.4	3667849.45
DR	-1700107.8	422504.3	-4.02388	0.155069	-7068534	3668318.9	-7068534.5	3668318.87

The specification of an independent variables in this model reveals that the ability to predict the earnings per share. R square value of 0.95, which is in the model, denotes that 95% of observed variability in earnings per share can be explained by the differences in the independent variables.

Remaining 5% variance in the earnings per share is related to other variables which is not taken here as consideration. Further, negative beta coefficient of debt ratio means that an increase of this variable brings about decrease in earnings per share, while positive beta coefficients of the D/E Ratio show an increase in earnings per share. However, the relationships among them is statistically insignificant (p > 0.05). In this research two variables are showing negative beta while one is showing positive beta. Debt ratio and equity ratio is showing indirect proportionate relationship while Debt -Equity ratio is showing direct relationship due to beta is positive.

Table 5: Testing of Hypotheses

Hypothesis	Beta Coefficient	Result	Statistical Significant
H1	-0.1699	Accepted	Not significant ($p > 0.05$)
H2	-0.1700	Rejected	Not significant ($p > 0.05$)
H3	239.02	Accepted	Not significant ($p > 0.05$)

Conclusion

In this paper, the relationship between capital structure ratio and Earnings per Share (EPS) and the impact on EPS have been studied.

Due to the availability of the data sample, five companies were selected for this analysis. The study used multiple regression model, Bivariate analysis and descriptive analysis to derive the conclusion for the study. The study revealed that Equity has negative association with EPS, where as leverage ratio (D/E) and Debt ratio have positive association per correlation analysis.

Further, the model has an impact on earnings per share with the magnitude of 95.0% of significance and 95 % is explain the dependencies on each other . This finding is supporting the result of reported by schwartz (1959), Ronal, w. (1983), Kinsman and Newman (1998), Rajan et al. (1995). The findings of this research have both theoretical & practical significance. As this research model proves to be an explanatory model about capital structure ratios and EPS, which findings are of important to improve the leverage decisions which maximize firm value and enough good positive signal in market.

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