IMPACT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE- EVIDENCE FROM SELECT BSE SENSEX COMPANIES DURING PRE AND POST IND AS ADOPTION PERIOD

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ABSTRACT

Capital structure decision is one of the most important decisions in the field of financial management which involves assessment about the choice of combination of different sources of funds. These sources of funds include short term debt, long term debt, preferred stock and common stock or equity stock financing and the decision about the perfect mixture of these sources is a difficult task for the financial manager in every business firm. The perfect or ideal mixture is that where the risk and costs are minimum at the same time profits and shareholders' wealth are maximum. Capital structure decision is a continuous process and becomes optimal when it maximizes the market value of the firm involved. Therefore, the continuous process of capital structure decisions involves an attempt to strike a balance between risks and returns in firm's operation. Managing of optimal capital structure is of paramount importance as it would affect the profitability and ultimately the value of the firm. However, what constitutes an optimal capital structure is still a unsolved question. Despite the fact that there are many theories which tried to explain the optimal capital structure, researchers in finance have never yet find a model to determine the optimal capital structure..

Key words: Agency Theory, Capital Structure, Adoption in India.

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1. INTRODUCTION

Capital structure decision is one of the most important decisions in the field of financial management which involves assessment about the choice of combination of different sources of funds. These sources of funds include short term debt, long term debt, preferred stock and common stock or equity stock financing and the decision about the perfect mixture of these sources is a difficult task for the financial manager in every business firm. The perfect or ideal mixture is that where the risk and costs are minimum at the same time profits and shareholders' wealth are maximum. Capital structure decision is a continuous process and becomes optimal when it maximizes the market value of the firm involved. Therefore, the continuous process of capital structure decisions involves an attempt to strike a balance between risks and returns in firm's operation. Managing of optimal capital structure is of paramount importance as it would affect the profitability and ultimately the value of the firm. However, what constitutes an optimal capital structure is still a unsolved question. Despite the fact that there are many theories which tried to explain the optimal capital structure, researchers in finance have never yet find a model to determine the optimal capital structure.

2. THEORIES OF CAPITAL STRUCTURE

Modigliani and Miller Theory: Modigliani and Miller gave a theory in 1958 which asserted that capital structure decision is irrelevant for firm value. However, their capital structure theory was based on various assumptions like complete market, absence of transaction cost, no tax etc. making the theory hardly realistic. Later in 1963, they introduced taxes into their model and showed that the value of a firm increases with more debt due to the tax shield. The theory propounded by them gave rise to serious academic discussion on the subject of capital structure in the subsequent period.

Pecking Order Theory: Myers and Majluf, 1984 developed the pecking order theory of capital structure. According to this theory, firms initially use internal funds such as excess liquid assets or retained earnings, then debt, and, if a project requires more funding, equity. Therefore, firms which are very profitable and generate sufficient cash flows will use less debt.

Trade off theory: The trade-off theory of capital structure advocates that a company chooses the mixture of debt financing and equity financing by striking a balance between the costs and benefits. The theory explains the fact that companies are usually financed partly with debt and partly with equity. It states that there is an advantage to financing with debt in the form of tax benefits and there is a cost of financing with debt i.e. the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs.

The Agency Theory

The agency theory suggests that managers will not always act in the best interest of the shareholders. Jensen and Meckling in 1976, further elaborate on this concept by identifying two main conflicts between parties to a company, firstly, between the managers and shareholders, and secondly, between the shareholders and the creditors. In the first instance, managers are tempted to pursue the profits of the firms they manage to their own personal gain at the expense of the shareholders. In the latter instance, debt provides shareholders with the incentive to invest sub-optimally. Accordingly to the agency theory, the optimal financial structure of the capital results from a compromise between various funding options that allow the reconciliation of conflicts of interests among managers, shareholders and creditors.

3. REVIEW OF LITERATURE

Das and Swain, (2018) studied influence of capital structure on financial performance by taking a sample of 50 manufacturing companies in India. The study used current ratio, long term debt to total assets, total debts to total assets and debt equity ratio as the proxies for capital structure (independent variable) whereas return on assets, return on equity, return on capital employed and earnings per share as the proxies for financial performance (dependent variable). The study concluded that there is a significant relationship between capital structure and profitability and capital structure had significant impact on financial performance of sample companies.

Arulvel.& Ajanthan, (2013) made a study by taking a sample of 8 trading companies listed in Colombo Stock Exchange. The study used annual report data of the sample companies for five years from 2007 to 2011. In the study Debt Equity Ratio and Debt Ratio were used as proxies for capital structure whereas Gross Profit Ratio, Net Profit Ratio, Return on Equity and Earning Per Share were used as proxies for financial performance. The study found that debt ratio is negatively correlated with all financial performance measures (Gross Profit, Net Profit, Return on Equity and Earnings Per Share) similarly Debt Equity Ratio is negatively correlated with all financial performance measures except Gross Profit and only Debt ratio shows significant relationship with NP.

Vatavu (2015) conducted a study on the impact of capital structure on financial performance in Romanian listed companies by taking a sample of 196 Romanian companies listed in the Bucharest Stock Exchange. The study used annual reports data of the sample companies for eight years from 2003-2010. The capital structure indicators used were long-term debt, short-term debt; total debt and total equity, while return on assets and return on equity were used as the performance proxies. The study found that over the 2003-2010 period, the most profitable manufacturing companies were those maintaining a high proportion of equity in their capital mix, avoiding borrowed funds. The study further revealed that shareholders' equity has a positive impact on performance indicators, while total debt and short-term debt have negative relationships with ROA and ROE.

Chinaemerem & Anthony (2012) examined the impact of capital structure on financial performance of Nigerian firms using a sample of thirty non-financial firms listed on the Nigerian Stock Exchange during the seven year period, 2004-2010. Panel data for the selected firms were generated and analyzed using ordinary least squares (OLS) as a method of estimation. The result showed that a firm's capital structure surrogated by Debt Ratio has a significantly negative impact on the firm's financial measures (Return on Asset, ROA, and Return on Equity, ROE).

Obonyo (2017) also made a similar study to examine the impact that capital structure has on the financial performance of companies listed at the Nairobi Securities Exchange. The study used annual report data of 30 companies sampled from the agricultural, automobiles and accessories, commercial and services, construction and allied energy and petroleum & manufacturing and allied sectors of the economy. Capital structure (the independent variable) was measured by debt ratio and financial performance (the dependent variable) was measured by earnings per share, return on assets and return on equity. The study hypothesized that there was no relationship between capital structure and earnings per share. The study concluded that there is a weak positive relationship between capital structure and financial performance of the listed companies.

Nassar S (2016) made an attempt to examine the impact of capital structure on the financial firm performance of industrial companies in Turkey. The annual financial statements of 136 industrial companies listed on Istanbul Stock Exchange (ISE) were used for this study covering a period of 8 years from 2005-2012. A multivariate regression analysis was applied

to test the relationship between capital structure and firm performance. To measure firm performance used indicators such as Return on Asset (ROA), Return on Equity (ROE) and Earning per Share (EPS) as well as Debt Ratio (DR) as capital structure variable. The results showed that there is a negative significant relationship between capital structure and firm performance.

Suardi & Noor (2015) analyzed the impact of capital structure on financial performance of the agriculture companies listed in Indonesia Stock Exchange. The study used annual report data of 16 agricultural companies for a period of five years from 2010-2014. Independent variable of the study i.e. capital structure was measured by debt equity ratio and debt asset ratio. The dependent variable i.e. financial performance was measured by gross profit margin, net profit margin, return on assets, return on equity and earnings per share. The result showed that debt equity ratio has a significant impact and a negative relationship with return on equity. This study also found that rather than the land, the value of company's building contributes more significantly towards the agriculture company's total assets which are more able to cover the debt.

Mauwa et.al. (2016) made a similar attempt to analyze the effect of capital structure on corporate financial performance by studying the annual report data of 6 companies listed in Rwanda Stock Exchange. The study also used information collected from 72 management staff members sampled from those listed companies. The study findings indicated that capital structure is negatively associated with ROA and ROE.

4. RESEARCH GAP

Many studies have been conducted by the researchers throughout the world to analyze the relationship between capital structure and financial performance and most of the studies have indicated about the existence of negative relationship between the two. However, number of such studies conducted in the Indian context has been found to be very small. Moreover, no such study has been found where the relationship between capital structure and financial performance were analyzed covering the Indian Accounting Standard (Ind AS) adoption period. As such, this study is an attempt to fill the gap by analyzing the aforementioned relationship during Indian Generally Accepted Accounting Principles (IGAAP) and Ind AS period.

5. IND AS ADOPTION IN INDIA

In India, adoption Ind AS has been made mandatory from the accounting year 2016-17 in a phased manner. As a result, most of the Indian companies except Banks, NBFCs, Insurance Companies and SMEs have started adoption of Ind AS in preparation and presentation of their financial statements. Though Change in accounting method does not impact business fundamentals yet the new shift to IFRS converged Ind AS is said to bring many changes in the reported financial parameters of companies. These changes are expected to be brought about on account of shift to fair valuation method, new norms for classification and reclassification of assets and liabilities, change in revenue recognition norms etc. apart from other factors. In light of the above, it is interesting to see the pattern of relationship between capital structure and financial performance during Indian GAAP as well as Ind AS regime.

6. OBJECTIVES OF THE STUDY

- To examine the impact of capital structure on financial performance of BSE listed companies during IGAAP period.

- To examine the impact of capital structure on financial performance of BSE listed companies during Ind AS period.

7. RESEARCH HYPOTHESES

Following hypotheses are formulated for the purpose of the study-

H01: The impact capital structure on financial performance (ROE) is not significant during IGAAP period.

H02: The impact capital structure on financial performance (ROA) is not significant during IGAAP period.

H03: The impact capital structure on financial performance (ROE) is not significant during Ind AS period.

H04. The impact capital structure on financial performance (ROA) is not significant during Ind AS period.

8. METHODOLOGY OF THE STUDY

The research methodologies of the present study are outlined below-

Sample of the Study:

The sample for the present study consists of the 30 companies listed in Bombay Stock Exchange (BSE) included in Sensex. However, as Ind AS is not applicable for Banks, NBFCs, Insurance companies and SMEs, these companies are not included in the final sample of the study. Consequently, 20 companies are selected as sample for the purpose of this study.

Data Sources:

In order to achieve the objectives and hypotheses of the study, the data is collected from secondary sources mainly from the audited annual financial statements of the companies under study for the period of 6 years from 2013-2014 to 2018-2019. The period of 6 years is further divided in to two parts of 3 years each i.e. 2013-14 to 2015-16 (IGAAP Period) and 2016-17 to 2018-19 (Ind AS period) to make a comparative analysis during two different regimes.

After the careful study of available literature, the following research model is formulated to examine the relationship between capital structure and financial performance.

Figure 1

DER=Debt Equity Ratio=Total Debt/ Equity,

ICR =Interest Coverage Ratio=Earnings before interest and tax/ Interest expense

DER and ICR have been used as proxies for capital structure.

ROE=Return on Equity

ROA=Return on Assets

ROE and ROA have been used as proxies for measuring financial performance.

Empirical Model:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \alpha$, where

Y=dependent variable

X= independent variable

β_0 =gradient of the equation

β =coefficient of independent variables

α =the error term

Considering the specific independent and dependent variables of the present study, the empirical model will be-

$$ROE = \beta_0 + \beta_1 DER + \beta_2 ICR + \alpha, \quad (1)$$

$$ROA = \beta_0 + \beta_1 DER + \beta_2 ICR + \alpha, \quad (2)$$

9. DATA ANALYSIS AND DISCUSSION

Descriptive Statistics:

Table 1(a) Descriptive statistics for IGAAP period

	<i>ROE</i>	<i>ROA</i>	<i>DER</i>	<i>ICR</i>
Mean	27.05	14.76	0.51	337
SD	22.60	9.60	0.78	862.53
Min	-0.82	-0.11	0.0067	1.45
Max	107.11	30.61	2.63	3835.45
Count	20	20	20	20

Table 1 (b) Descriptive statistics for Ind AS period

	<i>ROE</i>	<i>ROA</i>	<i>DER</i>	<i>ICR</i>
Mean	22.65	13.50	0.54	255.97
SD	14.79	9.02	0.81	709.74
Min	2.77	0.8	0	0
Max	74.31	31.73	2.97	3198.84
Count	20	20	20	20

The above table 1a and table 1b show the descriptive statistics for two periods i.e. IGAAP and Ind AS. As shown in the tables except DER, the mean values of all other three variables are larger during IGAAP period as compared to Ind AS period. It indicates that financial performance of the companies as measured by ROE and ROA declined during Ind AS period as compared to IGAAP period. However, there is no concrete evidence to believe that the difference in the abovementioned variables is due to adoption of Ind AS.

9.1 Correlation Matrix

Table 2 (a) Correlation Matrix for IGAAP period:

Variable	ROE	ROA	DER	ICR
ROE	1			
ROA	0.78	1		
DER	-0.58	-0.82	1	
IC	0.099	0.50	-0.24	1

Table 2 (b) Correlation Matrix for Ind AS period:

Variable	ROE	ROA	DER	ICR
ROE	1			
ROA	0.85	1		
DER	-0.45	-0.73	1	
IC	0.031	0.20	-0.26	1

The above table 2a and table 2b show the correlation matrix for two periods i.e. IGAAP and Ind AS. Table 2a shows that DER is negatively related with both ROE and ROA during IGAAP period whereas ICR is positively correlated with both ROE and ROA. Table 2b also shows the same pattern of relationship between DER, ICR and ROE, ROA as shown by table 2a. This indicates that the pattern of relationship between the capital structure variables and financial performance variables is similar during IGAAP as well as Ind AS period. However, the degree of such relationship is not same during the two periods.

9.2 Results of Regression Analysis

Regression analysis has been used to test the impact of capital structure on financial performance of BSE listed companies. The results of regression analysis as per the models formulated and mentioned above have been summarized below-

Regression analysis on impact of capital structure on financial performance (ROE and ROA) during IGAAP period-

Table 3 (a) Collinearity Test

Independent Variables	VIF
DER	1.04
ICR	1.04

In the study two independent variables have been taken. Regression equation has been run first to find out if there is any collinearity between the independent variables. From table 3a, it is observed that VIF value of independent variables is less than the rule of thumb 10. Hence there is no collinearity between independent variables and all the variables are eligible for running regression equation.

Table 3 (b) Regression analysis between capital structure and ROE: (IGAAP period)

Term	Coefficients	Standard Error	t Stat	P-value
Intercept	34.66713	6.286105	5.514882	3.78735E-05
DER	-13.945	6.386493	-2.18351	0.043305165<0.05
ICR	-0.00141	0.005751	-0.24515	0.809274216>0.05
R	0.47			
R ²	0.22			
Adjusted R ²	0.13			

The above table shows the regression analysis between capital structure and ROE during IGAAP period. Based on the above table adjusted $R^2 = 0.13$. That means 13% of the variation in the ROE is determined by the variation of debt equity ratio and interest coverage ratio and other remaining 87% is undetermined with a significant level of 5%. On the other hand the P value corresponding to DER is less than 0.05 which suggests that there is a significant relationship between DER and financial performance as measured by ROE during IGAAP period. However, the analysis of the regression output suggests that the relationship between ICR and ROE is not significant.

Table 3 (c) Regression analysis between capital structure and ROA: (IGAAP period)

Term	Coefficients	Standard Error	t Stat	P-value
Intercept	18.48655	2.016895	9.165849	5.46317E-08
DER	-8.51385	2.049105	-4.15491	0.00066314<0.05
ICR	0.001887	0.001845	1.022365	0.320937597>0.05
R	0.75			
R ²	0.56			
Adjusted R ²	0.50			

The above table shows the regression analysis between capital structure and ROA during IGAAP period. Based on the above table adjusted $R^2 = 0.50$. That means 50% of the variation in the ROA is determined by the variation of debt equity ratio and interest coverage ratio and other remaining 50% is undetermined with a significant level of 5%. On the other hand the P value corresponding to DER is less than 0.05 which suggests that there is a significant relationship between DER and financial performance as measured by ROA during IGAAP period. However, the analysis of the regression output suggests that the relationship between ICR and ROA is not significant.

Table 3 (d) Regression analysis between capital structure and ROE: (Ind AS period)

Term	Coefficients	Standard Error	t Stat	P-value
Intercept	26.77984	4.222257	6.342541	7.36E-06
DER	-7.70629	4.150354	-1.85678	0.080757<0.05
ICR	8.2E-05	0.004726	0.017361	0.986351>0.05
R	0.42			
R ²	0.18			
Adjusted R ²	0.08			

The above table shows the regression analysis between capital structure and ROE during IGAAP period. Based on the above table adjusted $R^2 = 0.08$. That means 8% of the variation in the ROA is determined by the variation of debt equity ratio and interest coverage ratio and other remaining 92% is undetermined with a significant level of 5%. On the other hand the P value corresponding to DER is less than 0.05 which suggests that there is a significant relationship between DER and financial performance as measured by ROE during IGAAP period. However, relationship between ICR and ROE is not significant.

Table 3 (e) Regression analysis between capital structure and ROA: (Ind AS period)

Term	Coefficients	Standard Error	t Stat	P-value
Intercept	17.00303	2.077395	8.184786	2.67E-07
DER	-7.19141	2.042018	-3.52172	0.002618<0.05
ICR	0.001452	0.002325	0.624306	0.540715>0.05
R	0.68			
R ²	0.46			
Adjusted R ²	0.40			

The above table shows the regression analysis between capital structure and ROA during Ind AS period. Based on the above table adjusted $R^2 = 0.40$. That means 40% of the variation in the ROA is determined by the variation of debt equity ratio and interest coverage ratio and other remaining 60% is undetermined with a significant level of 5%. On the other hand the P value corresponding to DER is less than 0.05 which suggests that there is a significant relationship between DER and financial performance as measured by ROA during Ind AS period. However, relationship between ICR and ROA is not significant at 5 % level of significance.

Table 4 Testing of Hypotheses

Sl. No.	Tools	Hypotheses	Result
H03	Regression	The impact capital structure on financial performance (ROE) is not significant during IGAAP period.	Partially Accepted
H02	Regression	The impact capital structure on financial performance (ROA) is not significant during IGAAP period.	Partially Accepted
H03	Regression	The impact capital structure on financial performance (ROE) is not significant during Ind AS period.	Partially Accepted
H04	Regression	The impact capital structure on financial performance (ROA) is not significant during Ind AS period.	Partially Accepted

10. CONCLUSION

The study made an attempt to examine the impact of capital structure on financial performance of BSE listed companies during IGAAP and Ind AS period. The analysis of the annual report data of the sample companies shows that DER is negatively associated with both ROE and ROA during IGAAP as well as Ind AS period. On the other hand, ICR is

positively associated with both ROE and ROA during the two periods. However, the degree of relationship is found to be very weak. Only DER has been found to be significant predictor of financial performance of the sample companies.

REFERENCES

- [1] Arulvel.K & Ajanthan. A, (2013). Capital Structure and Financial Performance: A Study of Listed Trading Companies in Sri Lanka .ACADEMICIA Vol. 3, No. 6.
- [2] Das C.P. & Swain R.K. (2018) Influence of Capital Structure on Financial Performance. Parikalpana - KIIT Journal of Management, Vol.14 No.1.
- [3] Vătavu. S (2015). The impact of capital structure on financial performance in Romanian listed companies. Procedia Economics and Finance, 32.
- [4] Chinaemerem O.C. & Anthony O. (2012) Impact of Capital Structure on the Financial Performance of Nigerian Firms. Arabian Journal of Business and Management Review Vol. 1, No.12.
- [5] Obonyo R.O. (2017) The Impact of Capital Structure on Financial Performance of Companies Listed at the Nairobi Security Exchange in Kenya. International Journal of Economics, Commerce and Management. Vol. 5 , No 6
- [6] Nassar S. (2016). The Impact of Capital Structure on Financial Performance of the Firms: Evidence from Borsa Istanbul. Journal of Business and Financial Affairs. Vol. 5. No.2
- [7] Suardi I. & Noor K.D (2015).The Impact of Capital Structure on Financial Performance of the listed Agriculture Companies in Indonesia. Global J. Bus. Soc. Sci. Review Vol. 3. No. 1
- [8] Mauwa J. Namusongeand G.S. & Onyango S. (2016).Effects of Capital Structure on Financial Performance of Firms Listed on the Rwanda Stock Exchange. European Journal of Business, Economics and Accountancy Vol. 4, No. 4.
- [9] Modigliani F. Miller M. (1958). The cost of capital, corporation finance, and the theory of Investment. American Economic Review 48.