



DOES CAPITAL STRUCTURE IMPACT FIRM PROFITABILITY? EVIDENCE FROM THE SERVICES INDUSTRY

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Abstract

Purpose: The purpose of this paper is to examine the impact of debt on profitability of the selected firms in service sector.

Design/methodology/approach: This study investigates firms that have been listed on the Bombay Stock Exchange during a eleven - year period (2001-2011). The study sample consists of 56 companies from selected industries with net worth exceeding 100 crores. Multi stage sampling method was adopted in the selection of sample. Variables used for the analysis include profitability, leverage ratios (total debt (TD), short-term debt (STD) and long-term debt (LTD) and firm size and sales growth are also included as control variables. Regression analysis was used to understand the impact of debt on ROE..

Findings: It is found that both short term debt and long term debt have influenced the profitability of the service firms . The impact of debt on profitability in health services and transports and logistics had shown to be highest among all other service industry. This study results reveal significantly positive relation between debt and profitability.

Research limitations/implications: This study is limited to the sample of service sector firms in India. Future research should investigate generalizations of the findings beyond the service sectors.

Originality/value: This study will contribute in examining the relationship between debt in capital structure and return on equity among listed service sector firms in India.

Key words: Capital structure, Debt, Financing, Hotel industry, Service industries, Tourism

Paper type: Research paper

JEL classification no. - G3

1. Introduction

The capital structure is defined as the mix of debt and equity that the firm uses in its operation. The capital structure of a firm is a mixture of different securities. In general, firms can choose among many alternative capital structures. For example, firms can arrange lease financing, use warrants, issue convertible bonds, sign forward contracts or trade bond swaps. Firms can also issue dozens of distinct securities in countless combinations to maximize overall market value (Abor, 2005).

Firms can use either debt or equity capital to finance their assets. The best choice is a mix of debt and equity. In the case where interest was not tax deductible, firms' owners would be indifferent as to whether they used debt or equity, and where interest was tax deductible, they would maximize the value of their firms by using 100% debt financing (Azhagaiah and Gavoury, 2011). The use of debt in capital structure of the firm leads to agency costs. Agency costs arise as a result of the relationships between shareholders and managers, and those between debt-holders and shareholders (Jensen and Meckling, 1976).

The pecking order hypothesis suggests that firms are willing to sell equity when the market overvalues it (Myers, 1984; Chittenden et al., 1996). This is based on the assumption that managers act in favor of the interest of existing shareholders. Consequently, they refuse to issue undervalued shares unless the value transfer

from “old” to new shareholders is more than offset by the net present value of the growth opportunity. It can be concluded that new shares are only issued at a higher price than that imposed by the real market value of the firm. Therefore, investors interpret the issuance of equity by a firm as signal of overpricing. If external financing is unavoidable, the firm will opt for secured debt as opposed to risky debt and firms will only issue common stocks as a last resort (Abor, 2005). Hence, the higher the debt ratio, the greater the risk, and thus higher the interest rate will be. At the same time, rising interest rates overwhelm the tax advantages of debt. If the firm falls on hard times and if its operating income is insufficient to cover interest charges, then stockholders will have to make up the short fall, and if they can't, the firm may be forced into bankruptcy. Good times may be just around the corner. But too much debt can keep the company wipeout shareholders in the process (Azhagaiah and Gavoury, 2011).

This study examines the impact of capital structure on profitability of the Indian corporate service sector firms. The literature cites a number of variables that are potentially associated with the profitability of firms. In this study, the selection of exploratory variables is based on the alternative capital structure, profitability theories and previous empirical work. The choice can be limited, however, due to data limitations. As a result, the set of proxy variables includes six factors: three ratios of short-term debt to total assets, long-term debt to total assets, total debt to total assets and, in addition, sales growth, firm size, and profitability (measured by return on equity).

2. Literature Review

Gupta(1969) conducted a study entitled “The Effect of Size Growth and Industry on Financial Structure of Manufacturing Companies”. The focus of the study was to identify the effects of industry, its size and growth on the financial structure relationship of American manufacturing enterprises. The study confirmed that total debt ratios were positively related to growth and negatively related to size. He also found significant industry-effect in debt ratio. He further, observed that family pattern of ownership is an important determinant of leverage in the paper and allied product industry.

Melicher et al (1976) in their study entitled “Industry Concentration, Financial Structure and Profitability” had shown that firms operating in the most highly concentrated industries were able to achieve substantially higher rates of return on book equity capital. While linear relationships between equity returns and concentration ratios are tenuous, the results support the existence of an 85 per cent ‘threshold’ concentration level above which there may be certain operating advantages. Higher equity returns were found to be primarily the result of higher operating profitability and not a result of differences in financing characteristics. Financial structures were not significantly different when examined across concentration ratio groups.

Pandey (1985) in his study entitled “The Financial Leverage in India: A Study”, carried out a study on 743 companies classified into 18 industrial groups for the period of 1973-74 to 1980-81 and examined the relationship between leverage, on the one hand, and size, industry, profitability and growth on the other. He observed that the highly favourable attitude of the corporate managers towards the use of leverage was borne out by the very high level of debt employed by the Indian corporate sector. The study revealed the tendency of large size companies to concentrate in the high level leverage class. But it was difficult to say conclusively that the size had an impact on the degree of leverage since the analysis revealed that a large number of small companies also employed high level of debt. The study also does not indicate a definite structural relationship between the degree of leverage on the one hand, and profitability and growth on the other. According to Pandey, although over the period, profitability and growth had improved, thus having the degree of leverage, yet a majority of the profitable and growth oriented groups of companies were concentrated within the narrow bonds of leverage.

Sureshbabu (1999) in his study on “capital structure practices of private corporate sector on India” analyzed the corporate debt practices, using a sample of 527 corporate firms for a period of fifteen years (1980-94). His study indicated that the private corporate sector in India showed a marked preference for debt in designing their capital structure and there was a

shift towards preference for long-term debt in lieu of the short-term debt. He observed that the nature of industry played an important role in the design of capital structure. While manufacturing industries namely, cement, paper, electronics, textile and metal group of industries, had a debt dominated capital structure, agro based industries (Tea and Coffee, Plantations and sugar) showed an equity oriented capital structure. His study revealed that financial risk, operating risk, debt service capacity and size of the firm were some of the important and major parameters in designing capital structure of the private corporate sector in India.

Pandey (2004) in his study entitled “Capital Structure, Profitability and Market Structure: evidence from Malaysia”, had provided new insights into the way in which capital structure and market power and capital structure and profitability are related. Structure and market power, as measured by Tobin’s Q, are shown to have a cubic relationship, due to the complex interaction of market conditions, agency problems and bankruptcy costs. The study finds a saucer-shaped relation between capital structure and profitability, due to the interplay of agency costs, costs of external financing and debt tax shield.

Modigliani and Miller (1958) have a theory of “capital structure irrelevance” where argue that financial leverage does not affect the firm’s market value with assumptions related to homogenous expectations, perfect capital markets and no taxes.

Abor (2005) seeks to investigate the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange and find a significantly positive relation between the ratio of short-term debt to total assets and ROE and negative relationship

between the ratio of long-term debt to total assets and ROE.

Gill, et al., (2011) seeks to extend Abor’s (2005) findings regarding the effect of capital structure on profitability by examining the effect of capital structure on profitability of the American service and manufacturing firms. A sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 – 2007 was selected. The correlations and regression analyses were used to estimate the functions relating to profitability (measured by return on equity) with measures of capital structure. Empirical results show a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry. The findings of this paper show also a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and between total debt to total assets and profitability in the manufacturing industry.

Shubita and Alsawalhah (2012) in their study “The Relationship between Capital Structure and Profitability” revealed that there exist a significant negative relationship between debt and profitability. This suggests that profitable firms depend more on equity as their main financing option.

In summary, based on limited availability of literature on the relationship between capital structure and the profitability of the firm, it has been found that capital structure impacts the profitability of the firm. The present study investigates the effect of capital structure on profitability of Indian Corporate service sector firms.

Table 1 below summarizes the definitions and theoretical predicted signs

Table 1: Proxy variables definition and predicted relationship

| Proxy Variables | Definitions | Predicted Sign |
|------------------------|--|----------------|
| Short -Term Debt (SDA) | Short –term debt divided by the total assets | +/- |
| Long-Term Debt (LDA) | Short –term debt divided by the total assets | +/- |
| Total Debt (DA) | Total debt divided by the total assets | +/- |
| Firm Size (SIZE) | Natural Logarithm of Firm’s Sales lagged one year period | +/- |
| Sales Growth (SG) | Current year’s Sales minus previous year’s sales divided by previous year’s sales | +/- |

ANALYSIS AND RESULTS

To remain consistent with previous studies, measures pertaining to capital structure and profitability were taken from Abor’s (2005, p. 442,) study. The study applied co- relational and non-experimental research design. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships.

To measure profitability dependent variable, we used earnings before interest, tax, and extraordinary income scaled by total owners’ equity, denoted as ROE, as a proxy for the firm’s profitability.

Capital structure independent variable was measured as debt ratios (short-term debt to total assets, long-term debt to total assets, and total debt to total assets).

Two control variables (firm size, and sales growth) were also included as standard determinants of corporate profitability. Natural logarithm of sales (SIZE) was used as proxy for the firm size. Sales growth (SG) was measured as current year’s sales minus previous year’s sales divided by previous year’s sales.

The relationship between debt and profitability is estimated in the following regression models:

$$\text{Profitability}_{i,t} = \beta_0 + \beta_1 * \text{STD} + \beta_2 * \text{SIZE} + \beta_3 * \text{SG} + \mu_{i,t}$$

$$\text{Profitability}_{i,t} = \beta_0 + \beta_1 * \text{LTD} + \beta_2 * \text{SIZE} + \beta_3 * \text{SG} + \mu_{i,t}$$

$$\text{Profitability}_{i,t} = \beta_0 + \beta_1 * \text{TD} + \beta_2 * \text{SIZE} + \beta_3 * \text{SG} + \mu_{i,t}$$

where β_0 = constant of the regression equation
 β_1, β_2 , and β_3 = coefficient of SDA, SIZE, and SG

β_1, β_2 , and β_3 = coefficient of LDA, SIZE, and SG

β_1, β_2 , and β_3 = coefficient of DA, SIZE, and SG

Note that all variables were calculated using book value.

Profitability_{i,t} - profitability for firm i between 2000-01 and 2011-12 measured by ROE.

SDA_{i,t} - Short-term debt/total capital for firm i in time t.

LDA_{i,t} - Long-term debt/total capital for firm i in time t.

DA_{i,t} - Total debt/total capital for firm i in time t.

SIZE_{i,t} - Natural logarithm of firm’s sales, lagged one year period.

SG_{i,t} - Current year’s sales minus previous year’s sales divided by previous year’s sales.

$\mu_{i,t}$ - the error term.

Descriptive Statistics

Table 1 provides descriptive statistics of the collected variables. All variables were calculated using balance sheet (book) values. The book value was used because the companies did not provide any market value related to the variables that we used in this study. In addition, the measurement of

profitability could only be based on income statement values, not on so-called market values. The explanatory variables are all firm specific quantities and there is no way to measure these variables in terms of their 'market value.' Furthermore, when market values are considered in such studies there is always a rather legitimate question of the date for which the 'market values' refer to. This is rather arbitrary. Hence, we relied on 'book values' as of the date of the financial reports

From the table 2, the regression models of Hotels and Tourism industry (1), (2), and (3) indicate that independent variables explain the debt ratio determinations at 62.1, 61.1, and 48.2 percent, respectively. The 'F' statistics prove the validity of the estimated models. Also, the coefficients are statistically significant in level of confidence of 99 percent.

The results in regression (1) reveal a significantly positive relationship between short term debt to total assets and profitability. This suggest that short term debt tends be less expensive, and therefore increasing short term debt with a relatively low interest rate will lead to an increase in profit levels. The result reveals that profitability is increased with size of the firm and there is no significant relationship between sales growth and profitability. Regression (2) shows that there is no significant association between long term debts to total assets and profitability. Size of the firm is not significant in determining the profitability of the hotels and tourism industry. But the sales growth is significantly associated with the profitability. Regression (3) explains that no significant association exists between profitability and total debt to total assets, and firm size. The sales growth is positively associated with profitability.

It can be noted that SDA, Size, and SG explained 72.1percent, LDA, Size, and SG explained 61.1 percent, and DA, Size and SG explained 48.2 percent variations in profitability.

$$ROE = -.631 + 1.796 STD + .074 SIZE + .001 SG$$

$$ROE = .023 -.910LTD + .064SIZE + .002SG$$

$$ROE = .230 -.761TD + .046SIZE + .002SG$$

In IT services, the independent variables explain the debt ratio determinations at 49.6, 71.3, and 66.8 percent, respectively. The 'F' statistics prove the validity of the estimated models. Also, the coefficients are statistically significant in level of confidence of 99 percent.

The results in regression (1) shows that no significant relationships between the ratio of short term debt to total assets and profitability, sales growth and profitability, and firm size and profitability. Regression (2) indicates that long term debt to total assets had been positively and significantly associated with profitability. The control variables corporate size and sales growth had not been significantly related with profitability. Regression (3) reveals that there is no significant association between total debt to total assets and profitability. Also, the control variables namely corporate size and sales growth had not been significant in explaining the relationship with profitability. It can be noted that the IT services firms have lower proportions of debt in their capital structure and it does not have any significant impact on the profitability.

It can be noted that SDA, Size, and SG explained 49.6 percent, LDA, Size, and SG explained 71.3percent, and DA, Size and SG explained 66.8 percent variations in profitability.

$$ROE = .057 + .304STD + .008SIZE + .000SG$$

$$ROE = .244 + .941 LTD + -.053 SIZE$$

$$ROE = .155 + .598 TD -.045 SIZE$$

The result from the regression results of wholesaling retailing industry explained that the profitability is significantly and positively associated with short term debt total assets, long term debt to total assets and total debt to total assets ratio. This indicates that borrowings both long term and short term will lead to an increase in profit levels. No significant relationship between corporate size and profitability, and sales growth and profitability were found in wholesaling retailing industry.

It can be noted that SDA, Size, and SG explained 83.0 percent, LDA, Size, and SG explained 71.5 percent, and DA, Size and SG explained 86.1 percent variations in profitability.

$$ROE = -.075 + .555STD + .004SIZE - .002SG$$

$$ROE = -.076 + .701LTD - .004SIZE + .001SG$$

$$ROE = -.112 + .417TD + -.011SIZE - .003SG$$

In table 3, regression models of transports and logistics explain that there was no significant relationship between short term debt to total assets and profitability, and long term debt to total assets and profitability. But the total debt to total assets had significantly, positively associated with profitability. The corporate size of the firm was negatively but significantly associated with profitability in regression (3). Sales growth was positively and significantly associated with profitability in regression results (1) and (2).

It can be noted that SDA, Size, and SG explained 80.4 percent, LDA, Size, and SG explained 80.4 percent, and DA, Size and SG explained 91.6 percent variations in profitability.

$$ROE = .483 - 1.457STD - .029SIZE + .003SG$$

$$ROE = .484 - 1.095LTD + .010SIZE + .003SG$$

$$ROE = .164 + .642TD - .071SIZE + .001SG$$

Regression results of health industry shows that (1) no significant relationship exist between short term debt to total assets ratio and profitability. The control variable, corporate size was significantly associated with profitability and sales growth was not significant in explaining the correlation with profitability of the firm. Regression result (2) long term debt was significantly but negatively associated with profitability. This explains that an increase in the long term debt position is associated with a decrease in profitability. This is explained by the fact that long term debts are relatively more expensive, and therefore employing high proportions of them could lead to low profitability. Corporate size was positively related with profitability. From the regression result (3) no significant relationship between total debt to total assets and profitability.

Corporate size was significantly associated with profitability.

It can be noted that SDA, Size, and SG explained 94.9 percent, LDA, Size, and SG explained 96.5 percent, and DA, Size and SG explained 90.8 percent variations in profitability.

$$ROE = -.803 + 1.028STD + .175SIZE - .001SG$$

$$ROE = -.632 - .835LTD + .246SIZE + .001SG$$

$$ROE = -.378 - .363TD + .180SIZE$$

Telecommunication industry recorded a positive relationship between the ratio of long term debt to total assets and profitability, and total debt to total assets and profitability were found in regression results (1) and (2) respectively. The ratio of Short term debt to total assets and profitability had not any significant influence over the profitability of the telecommunication services industry.

It can be noted that SDA, Size, and SG explained 64.0 percent, LDA, Size, and SG explained 84.3 percent, and DA, Size and SG explained 80.5 percent variations in profitability.

$$ROE = .034 + .490STD + .002SIZE + .001SG$$

$$ROE = .300 + .816LTD - .053SIZE + .001SG$$

$$ROE = -.109 + .553TD - .009SIZE + .001SG$$

Table 4 explain the regression models of recreational and other miscellaneous industry. It is observed in recreational services industry that there exist no significant relationship between the ratio of short term debt to total assets and profitability, and the ratio of total debt to total assets and profitability in the regression results (1) and (3) respectively. The ratio of long term debt to total assets and profitability had a significant and positive association with profitability of recreational services industry. The variables corporate size and sales growth were significantly related with the profitability in regression results (2) and (3). Only sales growth was significant in the case of regression result (1) of recreational services sector.

It can be noted that SDA, Size, and SG explained 74.4 percent, LDA, Size, and SG

explained 82.6 percent, and DA, Size and SG explained 78.0 percent variations in profitability.

$$ROE = .278 + .100STD - .042SIZE + .002SG$$

$$ROE = .567 + .469LTD - .112SIZE + .002SG$$

$$ROE = .257 + .146TD - .047SIZE + .002SG$$

Regression model estimates of miscellaneous service industry indicates that leverage position of miscellaneous services industry does not have any significant influence over the profitability. Similar situation was observed in IT services sectors in which only long term debt to total assets ratio was significantly related with profitability. It can be noted that both in IT services and other miscellaneous services sector, the average total debt ratio was 36 percent and 47 percent respectively.

It can be noted that SDA, Size, and SG explained 22.3 percent, LDA, Size, and SG explained 19.6 percent, and DA, Size and SG explained 21.8 percent variations in profitability.

$$ROE = -.069 + .348STD + .029SIZE + .001SG$$

$$ROE = .155 + .095LTD - .002SIZE + .001SG$$

$$ROE = .025 + .178TD + .009SIZE + .001SG$$

From table 5, It can be concluded that short term debt is considered important in explaining the variations over the profitability in health services, wholesaling and retailing and transports and logistics industry. On the other hand, Long term debt is influencing the profitability more in the case of health services, IT services, telecommunication services, recreational services and transports and logistics industry. Total debt to total assets explained significant variations over profitability in transports and logistics, health services, wholesaling and retailing IT services, and telecommunication services industry. Above all, the impact of debt on profitability in health

services had shown to be highest among all other service industry.

Conclusions and recommendations

Capital structure is still one of the most debatable issues in corporate finance research since Modigliani and Miller's (1958) irrelevance proposition. The capital structure decision is crucial for any business organization. The decision is important because of the need to maximize returns to various organizational constituencies, and also because of the impact such a decision has on an organization's ability to deal with its competitive environment.

This study results reveal significantly positive relation between debt and profitability. These findings imply that an increase in debt position is associated with an increase in profitability; thus, the higher the debt, the higher the profitability of the firm. The results also show that profitability increases with control variables; size and sales growth. Although the financial leverage provides tax benefits to the corporations, it increases default risk for the lending institutions such as banks, financial institutions, and other private lenders. The study revealed that almost all firms are using around 50 per cent of debt in its capital structure. To improve the efficiency, it is important for the lending institutions to understand default risk of a firm in different service sectors.

Based on these results the following recommendations are suggested:-

1. The firm must consider using an optimal capital structure. The optimal capital structure means "best" debt/equity ratio for the firm, which in turn, will minimize the cost of capital with maximum return. In addition, it will reduce the chances of bankruptcy.

2. This study is limited to the sample of service sector firms in India. Future research should investigate generalizations of the findings beyond the service sectors.

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Tables

Table 1: Descriptive Statistics of Independent, Dependent, and Control Variables (2001-2011)

Table 1: Descriptive Statistics of Independent, Dependent, and Control Variables (2001-2011)

| | Hotels and Tourism | | | | IT Services | | | | Wholesaling and Retailing | | | | Transports and Logistics | | | | Health Services | | | | Telecommunication Services | | | | Recreational Services | | | | Other miscellaneous services | | | | | | | |
|------|--------------------|-------|--------|-------|-------------|-------|-------|-------|---------------------------|-------|--------|-------|--------------------------|-------|--------|-------|-----------------|-------|-------|-------|----------------------------|-------|-------|-------|-----------------------|-------|--------|-------|------------------------------|-------|--------|-------|------|----|-----|-----|
| Var | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max | Mean | SD | Min | Max |
| ROE | 0.115 | 0.056 | 0.06 | 0.21 | 0.161 | 0.036 | 0.11 | 0.21 | 0.109 | 0.031 | 0.06 | 0.16 | 0.135 | 0.045 | 0.08 | 0.21 | 0.244 | 0.103 | 0.12 | 0.41 | 0.208 | 0.063 | 0.12 | 0.31 | 0.096 | 0.056 | 0.02 | 0.21 | 0.185 | 0.03 | 0.15 | 0.26 | | | | |
| LDA | 0.151 | 0.017 | 0.13 | 0.18 | 0.209 | 0.064 | 0.11 | 0.28 | 0.288 | 0.04 | 0.23 | 0.34 | 0.404 | 0.012 | 0.39 | 0.42 | 0.3 | 0.083 | 0.21 | 0.43 | 0.312 | 0.051 | 0.25 | 0.41 | 0.269 | 0.122 | 0.12 | 0.45 | 0.264 | 0.035 | 0.21 | 0.31 | | | | |
| SDA | 0.37 | 0.029 | 0.29 | 0.4 | 0.151 | 0.028 | 0.11 | 0.2 | 0.32 | 0.05 | 0.22 | 0.36 | 0.136 | 0.014 | 0.12 | 0.16 | 0.241 | 0.028 | 0.2 | 0.28 | 0.234 | 0.077 | 0.15 | 0.36 | 0.248 | 0.08 | 0.12 | 0.38 | 0.212 | 0.044 | 0.15 | 0.27 | | | | |
| DA | 0.52 | 0.02 | 0.47 | 0.55 | 0.361 | 0.087 | 0.22 | 0.46 | 0.609 | 0.081 | 0.48 | 0.68 | 0.541 | 0.081 | 0.51 | 0.55 | 0.541 | 0.068 | 0.43 | 0.64 | 0.547 | 0.064 | 0.46 | 0.69 | 0.517 | 0.081 | 0.44 | 0.56 | 0.476 | 0.04 | 0.48 | 0.6 | | | | |
| SIZE | 6.115 | 0.528 | 5.46 | 6.934 | 5.493 | 0.818 | 4.46 | 6.58 | 4.394 | 0.698 | 3.59 | 5.46 | 6.365 | 0.694 | 5.42 | 7.15 | 4.636 | 0.675 | 3.94 | 5.71 | 7.526 | 1.156 | 5.95 | 9.05 | 5.594 | 0.898 | 4.52 | 6.83 | 5.653 | 0.53 | 5.1 | 6.37 | | | | |
| SG | 0.175 | 0.18 | -0.082 | 0.488 | 0.469 | 0.665 | 0.061 | 2.389 | 1.54 | 1.421 | -0.027 | 4.942 | 0.122 | 0.135 | -0.017 | 0.404 | 0.212 | 0.116 | 0.094 | 0.416 | 0.343 | 0.183 | 0.941 | 0.607 | 0.187 | 0.225 | -0.011 | 0.664 | 0.146 | 0.147 | -0.052 | 41.82 | | | | |

Table:2 Regression model estimate for Hotels and Tourism, IT Services and Wholesaling and Retailing (Ordinary Least Squares)

| Variables | Hotels and Tourism | | | IT Services | | | Wholesaling and Retailing | | |
|----------------|--------------------|-----------------|-----------------|----------------|-----------------|-----------------|---------------------------|-----------------|-----------------|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SDA | 1.796 (.045) | | | .304 (.607) | | | .555 (.003) | | |
| LDA | | -.910 (.106) | | | .941 (.047) | | | .701 (.018) | |
| DA | | | -.761 (.390) | | | .598 (.084) | | | .417 (.001) |
| SIZE | .074 (.042) | .064 (.054) | .046 (.162) | .008 (.705) | -.053 (.131) | -.045 (.214) | .004 (.639) | -.004 (.772) | -.011 (.308) |
| SG | .001 (.137) | .002 (.030) | .002 (.050) | .000 (.171) | .000 (.107) | .000 (.075) | -.002 (.291) | .001 (.460) | -.003 (.478) |
| R ² | .721 | .611 | .482 | .496 | .713 | .668 | .830 | .715 | .861 |
| SE | .04122 | .04173 | .04818 | .03092 | .02335 | .02512 | .01533 | .01982 | .01382 |
| Prob(f) | .066 | .071 | .180 | .164 | .026 | .042 | .004 | .025 | .002 |

Table: 3 Regression model estimate for Transports and Logistics, Health Services, and Telecommunication Services (Ordinary Least Squares)

| Variables | Transports and Logistics | | | Health Services | | | Telecommunication Services | | |
|----------------------|--------------------------|------------------|-----------------|-----------------|-----------------|-----------------|----------------------------|-----------------|-----------------|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| SDA | -1.457 (.200) | | | 1.028 (.031) | | | .490 (.474) | | |
| LDA | | -1.095 (.199) | | | -.835 (.007) | | | .816 (.015) | |
| DA | | | .642 (.007) | | | -.363 (.381) | | | .553 (.034) |
| SIZE | -.029 (.228) | .010 (.518) | -.071 (.009) | .175 (.000) | .246 (.000) | .180 (.004) | .002 (.964) | -.053 (.003) | -.009 (.542) |
| SG | .003 (.002) | .003 (.002) | .001 (.310) | -.001 (.576) | -.001 (.482) | .000 (.893) | .001 (.209) | .001 (.047) | .001 (.065) |
| R² | .804 | .804 | .916 | .949 | .965 | .908 | .640 | .843 | .805 |
| SE | .02389 | .02387 | .01559 | .02792 | .02306 | .03758 | .04518 | .02982 | .03330 |
| Prob(f) | .007 | .007 | .000 | .000 | .000 | .001 | .055 | .003 | .007 |

Table:4 Regression model estimate for Recreational Services and miscellaneous services Industry(Ordinary Least Squares)

| Variables | Recreational Services | | | Miscellaneous services | | |
|----------------------|-----------------------|-------------|-------------|------------------------|-------------|------------|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| SDA | .100(.756) | | | .348(.602) | | |
| LDA | | .469(.045) | | | .095(.820) | |
| DA | | | .146(.297) | | | .178(.629) |
| SIZE | -.042(.211) | -.112(.014) | -.047(.007) | .029(.600) | -.002(.950) | .009(.712) |
| SG | .002(.032) | .002(.006) | .002(.012) | .001(.233) | .001(.272) | .001(.222) |
| R² | .744 | .826 | .780 | .223 | .196 | .218 |
| SE | .03416 | .02815 | .03167 | .03249 | .03304 | .03259 |
| Prob(f) | .018 | .005 | .011 | .598 | .653 | .607 |

Table:5 Impact of capital structure on profitability (Based on Co-efficient of Determination)

| S.No | Industries | SDA, Size, and SG(R ²) | LDA, Size, and SG(R ²) | DA, Size, and SG(R ²) |
|------|------------------------------|------------------------------------|------------------------------------|-----------------------------------|
| 1 | Hotels and Tourism | .721 | .611 | .482 |
| 2 | IT Services | .640 | .843 | .805 |
| 3 | Wholesaling and Retailing | .830 | .715 | .861 |
| 4 | Transports and Logistics | .804 | .804 | .916 |
| 5 | Health Services | .949 | .965 | .908 |
| 6 | Telecommunication Services | .640 | .843 | .805 |
| 7 | Recreational Services | .744 | .826 | .780 |
| 8 | Other miscellaneous services | .223 | .196 | .218 |