Original Research Article

Does capital structure affect profitability? Evidence from Indian IT Companies

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A R T I C L E   I N F O

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A B S T R A C T

Background: In spite of many years of rigorous exploration and several papers after Modigliani and Millers’ original work, surprisingly there is absence of agreement even today among the finance specialists on the fundamental issue of corporate finance, concerning why finance managers utilize various combinations of debt and equity. Most of the researchers opine differently as to what is the ideal debt and equity formation, which can maximize the profitability of the origination.

The degree of collision of capital structure on profitability as well as to scrutinize the model debt and equity structure in the selected IT companies of India is the prime intent of the study. We have chosen the top five IT companies of India from the period 2014-2015 to 2018-19 based on market capitalisation. Different analysis such as Proportion Analysis, Correlation Analysis and Regression Analysis are taken into consideration to find out the noteworthy association between the debt-equity mix and profitability of companies.

Findings: The after-effects of correlation examination show that, both DER and DTA have a negative relationship with NP, though not significantly, while both DER and DTA have a significant negative relationship with ROA. Nevertheless, all other profitability factors for example ROCE, RONW and RLTF have a strong and positive relationship with DER and DTA, which may be a result of the advantage of trading on equity dealt in by the organization. As the study based on the experimental variability’s such as NP, ROCE, RONW, ROA and ROLF, with the predictor variable as Debt Equity Ratio (DER) and Debt to Total Assets Ratio (DTA), taken together to establish the association with capital structure. After the analysis, results shows that, the $R^2$ estems as computed in the regression examination are 22.9%, 88.4%, 93.1%, 71.8% and 88.7%. It demonstrates that; expect Net Profit, which shows a moderate positive relationship but other variables show a strong positive relationship with capital structure.

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1. Introduction

Financing decisions for every modern corporate behemoth are one of the most important areas of concern for CFOs; as it throws greater challenges as directly influence the financial recital of the companies.¹ The CFO of each business always strives to maximize the economic well-being of the shareholders based on the market value of the business. To this end, he will have to take many decisions such as investment, financing and dividend decisions. There are basically two options in funding decisions. The first is the dividend option - the distribution of sustained income paid in the form of promises and dividends. The second is the capital structure - the ratio of external borrowing and the ratio of new equity. Actually, decisions about the two choices will not affect the quality of the business. Because these decisions concern the form of distribution, either the type of protection or the ownership structure, but not the investment decision. Typically, companies have internal and external sources of their capital structure to finance

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their investments. Maintaining internal sources includes profit and depreciation; when there is a question of a new borrowing or sharing in external sources.

The capital structure is a blend of debt and equity, which appreciably influence the financial recital of the company. Proficient administration of the capital structure ensures the accessibility of the assets vital for future development and for improving the financial performance. The specific manner by which organizations pick the measure of debt and equity in their capital structures has become a cerebral pain for the advanced fund experts. The equity-debt ratio depends on the nature of the industry, such as the company’s performance and its growth among its industry peers. It is considered very profitable for an organization to include the source of the maximum debt in its capital structure; therefore, the organization is free to act prohibited by its creditors and its profit may be lost due to payment high interest charges. There is a huge contrast among industry and individual substances regarding the capital structure and numerous elements that affects the decision of an organization’s capital structure, but the decision of the person who decides the capital structure plays an important role. Decision makers can have different capital structures based on different decisions, including the importance of different factors in two similar organizations.

2. Research Gap

In Indian context, various research studies have been conducted on capital structure; most of them are related to non-financial and manufacturing companies. Although few researchers tried to conduct some studies on capital structure of specific sectors’, still the number of studies related to IT and Software sector is very limited. Hope the present study will fill the gap to certain extent, which is designed to observe the association between profitability and capital structure, particularly in Indian IT companies.

3. Review of Literature

Despite the fact that one of the noticeable researchers in finance, Prof. Stewart Myers has over and done with that there is no general theory of the debt-equity and still there are proceeding with research in this field to find out the ideal debt-equity blend to maximise the profitability

4 Pandey et al (2007) in his study of 208 Malaysian companies found out that there exists a saucer-shaped relationship as shared by capital structure and profitability due to the association among agency costs, external financing costs and interest-tax shield. The examination additionally indicated size, assets, tangibility being positively related capital structure while growth, risk and ownership being negatively related with capital structure.

Mishra (2011) studied the factors affecting Indian central PSUs and found that capital structure being affected by asset tangibility, profitability and tax in case of profit making manufacturing PSUs. The analysis also confirmed that leverage ratio is positively affected by tangibility and growth and capital structure is negatively affected by profitability and tax.

Soni & Trivedi (2013) discussed both operating as well as financial leverage of Indian paint companies. They selected five listed paint companies as per market capitalization, which analyzed the impact of debt-equity ratio on EPS and determine the influence of debt on the company’s performance. The study concludes that there is no significant correlation between financial leverage and profitability but in other hand operating leverage has a significant relationship with profitability.

Poddar and Mittal (2014) studies on “Capital Structure Determinants of Steel Companies in India: A Panel Data Analysis” made a study to identify the financing decisions which were important for the financial welfare of the firm. The study emphasized that a negative decision related to capital structure may lead to financial distress as well as ruin the business. The theoretical research suggested to existence of an optimal capital structure, for which there was no universal methodology.

Gomathi & Amsaveni (2015) in their research paper explored a comparative study on the determinants of capital structure towards selected domestic and foreign equity mixed manufacturing industry in India and found that, tangibility, growth, profitability, liquidity, firm size, non-debt tax shield, and ownership have major contribution to long-term debt-equity ratio of domestic equity owned manufacturing sector but the tangibility, non-debt tax shield, profitability, ownership and business risk have critical commitment to long-term debt-equity ratio of foreign equity blended manufacturing industry.

4. Objectives of the Study

The only objective of this study is to understand the impact of capital structure decisions on the profitability i.e. performance of a firm with special reference to selected Indian IT companies.

4.1. Importance of the Study

The debate of impact of capital structure on profit has already became a headline in the finance literature in the present finance environment, every firm is running after to find out the magic number of debt-equity ratio in order to maximize profitability. This study is an endeavour to understand through the statistical analysis whether there is any collision of capital structure on productivity of selected IT companies.
4.2. Research Methodology

Research is a procedure of getting precise responses to significant and applicable inquiries utilizing logical techniques for information assortment and understanding. The current paper depends on secondary information which is accessible the industries yearly information, websites etc. from the period 2015-2019.\textsuperscript{22} By means of different ratios such as composition structure ratios, relevant profitability ratios etc. researchers attempt to find out that whether it affected by the capital structure of the business during this period or not. Statistical tests were conducted at a significant level f 5\% with 2-tailed test, which draws conclusions about the reliability and generalization of results. To test research hypotheses; the researcher include Correlation and Regression Analysis.

4.3. Design

Researchers have utilized correlation and regression analysis by bearing in mind profitability as dependent variable and capital structure as independent to find out the association between capital structure and productivity. Regression analysis is used to explore the association between the variables as well as examine the hypothesis. Profit means of Return on Long Term Funds, Return on Assets, Return on Net Worth, Return on Capital employed and Net Profit. It represents,

As follows, \( P=f(\text{CS}) \), where, \( P \) is profit and \( \text{CS} \) is capital structure.

4.4. Conceptual Model

![Fig. 1:]

4.5. Hypothesis of the Study

The following hypotheses were formulated for the study:

H1: The Capital Structure of the Companies affects significantly to the Net Profit.
H2: The Capital Structure of the Companies affects significantly to the Return on Capital Employed.
H3: The Capital Structure of the Companies affects significantly to the Return on Net Worth.
H4: The Capital Structure of the Companies affects significantly to the Return on Assets.
H5: The Capital Structure of the Companies affects significantly to the Return on Long Term Funds.

4.6. Sample Companies

We have selected top five Indian IT Companies based on their market capitalization to assess the ideal capital structure and its collision on profitability as follows:

4.7. Analysis of the Study

The summarised ratio analysis of sample companies is being analysed and depicted in the following table:

5. Results of Correlation Analysis

The results of correlation analysis as depicted in table-3 shows that, both DER and DTA are negatively associated with NP. Though the relationship is weak, still it gives an indication that no more debt should be infused into the capital structure else, it would lead to reduction in profitability. However, at the same time, both DER and DTA have a strong negative relationship with ROA. However, all other profitability variables i.e. ROCE, RONW and RLTF have a strong and positive relationship with DER and DTA, which might be because of the benefit of trading on equity enjoyed by the companies.

5.1. Regression Analysis

The \( R^2 \) values as computed in the above regression analysis are 22.9\%, 88.4\%, 93.1\%, 71.8\% and 88.7\% respectively of the observed variability in NP, ROCE, RONW, ROA and ROLF, which are explained by the variability in the independent variable of Debt Equity Ratio(DER) and Debt to Total Assets Ratio (DTA), taken jointly. These indicate that, except with Net Profit, which shows a moderate positive relationship, all other variables show a significant positive relationship with capital structure.

5.2. Findings

This research thoroughly found out the impact of capital structure on the level of profitability of sample companies for the period 2014-15 to 2018-19 and the key conclusion as summarized below.

The results of correlation analysis show that, both DER and DTA have a weak negative relationship with NP, whereas at the same time, both DER and DTA have a strong negative relationship with ROA. However, all other profitability variables i.e. ROCE, RONW and RLTF have a strong and positive relationship with DER and DTA, which might be because of the benefit of trading on equity enjoyed by the companies.

The results of regression analysis shows that, the \( R^2 \) values as computed in the regression analysis are 22.9\%,
Table 1:
Top five Indian IT companies as on 24/12/2019 (Rs. in crores)

| Ranking | Name         | Last Price | Market Cap. (Rs. cr.) | Sales Turnover | Net Profit | Total Assets (Rs. cr.) | Turnover |
|---------|--------------|------------|-----------------------|----------------|------------|------------------------|----------|
| 1       | TCS          | 2,215.60   | 831,378.36            | 146,463.00     | 31,562.00  | 89,943.00              |          |
| 2       | Infosys      | 733.4      | 312,315.21            | 82,675.00      | 15,410.00  | 65,006.00              |          |
| 3       | HCL Tech     | 560.55     | 152,114.50            | 60,427.00      | 10,120.00  | 45,170.00              |          |
| 4       | Wipro        | 252.25     | 144,110.14            | 58,584.50      | 9,022.20   | 66,331.60              |          |
| 5       | Tech Mahindra| 772.05     | 76,103.82             | 34,742.10      | 4,354.30   | 23,397.20              |          |

Source: www.moneycontrol.com

Table 2:
Summarised ratio analysis of sample companies

| Year     | Debt-Equity | Debt to Total | Net Profit | Return On Capital | Return On Net Worth | Return Assets | Return on Long Term Funds |
|----------|-------------|---------------|------------|-------------------|--------------------|--------------|--------------------------|
|          | Ratio(DER) = Outsiders Fund/Shareholder’s Fund | Outsiders Liability/Total Assets | Margin(%)(NP) | Employed(%)(ROCE) | (%)(RONW/ROE) | (%) | (%) |
| Mar-15   | 0.389       | 0.280         | 26.17      | 52.77             | 42.4               | 231.87       | 52.99                    |
| Mar-16   | 0.191       | 0.160         | 26.87      | 45.03             | 35.49              | 329.94       | 45.11                    |
| Mar-17   | 0.150       | 0.131         | 25.51      | 38.43             | 30.31              | 395.96       | 38.53                    |
| Mar-18   | 0.200       | 0.167         | 25.92      | 42                | 33.27              | 396.31       | 42.1                     |
| Mar 19   | 0.261       | 0.207         | 24.4       | 51.78             | 38.1               | 210.26       | 51.78                    |

Source: www.moneycontrol.com

Table 3:
Correlations analysis

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | 1   | .999** | -0.017 | .874 | .954* | -0.786 | .880* |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .000 | .979 | .052 | .012 | .115 | .049 |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | .999** | 1 | -.040 | .893* | .962* | -0.803 | .898* |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .000 | .949 | .041 | .009 | .102 | .038 |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | -0.017 | .979 | .726 | .985 | .546 | .735 |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .041 | .726 | .009 | .009 | .077 | .000 |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | .874 | .893* | -.217 | 1 | .960** | -.968** | 1.000** |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .052 | .041 | .217 | 1 | .960** | 1 | -.883* | .964** |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | .954* | .962** | .011 | .960** | 1 | -.883* | .964** |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .12 | .009 | .985 | .009 | .047 | .008 |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | -.786 | -.803 | .365 | -.968** | -.883* | 1 | - | .967** |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .115 | .102 | .546 | .007 | .047 | .007 |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Pearson Correlation | .880* | .898* | -.209 | 1.000** | .964** | -.967** | 1 |

|          | Der | Dta | Np  | Roce | Ronw | Roa | Rltf |
|----------|-----|-----|-----|------|------|-----|------|
| Sig. (2-tailed) | .049 | .038 | .735 | .000 | .008 | .007 |
| N         | 25  | 25  | 25  | 25   | 25   | 25  | 25   |

* Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: Computed through SPSS from the data collected from the website www.moneycontrol.com
Table 4:

Regression analysis of dependent variable - np and independent variables - der & dta

| Model | R | R Square | Adjusted R Square | Model summary | Std. Error of the Estimate | Durbin-Watson |
|-------|---|----------|-------------------|---------------|---------------------------|---------------|
| 1     | .479<sup>a</sup> | .229 | -.542 | 1.13406 | 2.840 |

a. Predictors: (Constant), DTA, DER  
b. Dependent Variable: NP

| Coefficients | Unstandardized Coefficients | Standardized Coefficients | T | Sig. | 95.0% Confidence Interval for B |
|--------------|-----------------------------|----------------------------|----|------|--------------------------------|
|              | B                           | Std. Error                 | Beta |      | Lower Bound | Upper Bound |
| (Constant)   | 29.604                      | 5.157                      | .976 | .432 | -45.206 | 71.724 |
| DER          | 53.649                      | 70.050                     | .766 | .524 | -247.753 | 355.051 |
| DTA          | -87.360                     | 113.341                    | -.771 | .521 | -575.028 | 400.308 |

a. Dependent Variable: NP

Source: Computed through SPSS from the data collected from the website www.moneycontrol.com

Table 5:

Regression analysis of dependent variable - roce and independent variables - der & dta

| Model summary | Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---------------|-------|---|----------|-------------------|---------------------------|---------------|
|               | 1     | .940<sup>a</sup> | .884 | .767 | 2.98828 | 2.553 |

a. Predictors: (Constant), DTA, DER  
b. Dependent Variable: ROCE

| Coefficients | Unstandardized Coefficients | Standardized Coefficients | T | Sig. | 95.0% Confidence Interval for B |
|--------------|-----------------------------|----------------------------|----|------|--------------------------------|
|              | B                           | Std. Error                 | Beta |      | Lower Bound | Upper Bound |
| (Constant)   | 13.259                      | 13.588                     | .976 | .432 | -45.206 | 71.724 |
| DER          | -212.071                    | 184.585                    | -1.149 | .369 | -1006.276 | 582.135 |
| DTA          | 437.979                     | 298.658                    | 1.466 | .280 | -847.041 | 1723.000 |

a. Dependent Variable: ROCE

Source: Computed through SPSS from the data collected from the website www.moneycontrol.com

88.4%, 93.1%, 71.8% and 88.7% respectively of the experimental variability in NP, ROCE, RONW, ROA and ROLF, and Debt Equity Ratio (DER) and Debt to Total Assets Ratio (DTA) jointly taken as independent variable which shows that except Net Profit, all other variables show a significant positive association with capital structure.

6. Limitations of the Study

The current research is carried out just for five companies, which itself is a big limitation. Furthermore, the period of our study was only for five years. The numbers of variables taken for study were only five, which may not be sufficient for conclusive results.

7. Scope of Further Research

To avoid or minimize the effects of the above limitations, the number of business organizations under this study should be amplified, the duration of the study should be increased, and the scope of the study and the variables under study should be expanded.

8. Conclusions

A fundamental truth of the financially strong firm’s survival is that the firm must be liquid enough when it is constantly profitable at the same time it has to concentrate on increasing its wealth and creating additional wealth. Development is necessary for survival for every business entity. In other words, to maintain liquidity, the business must keep sufficient untapped resources and invest in idle
### Table 6:

**Regression analysis of dependent variable - RONW and independent variables - DER & DTA**

| Model Summary | Model | R       | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---------------|-------|---------|----------|-------------------|-----------------------------|---------------|
|               | 1     | .965<sup>a</sup> | .931     | .862              | 1.71418                     | 2.285         |
| a. Predictors: (Constant), DTA, DER |
| b. Dependent Variable: RONW |

**Coefficients**

| Model | Unstandardized Coefficients | Standardized Coefficients | T | Sig. | 95.0% Confidence Interval for B |
|-------|----------------------------|---------------------------|---|------|-------------------------------|
|       | B                          | Std. Error                | Beta |      | Lower Bound | Upper Bound |
| (Constant) | 18.394            | 7.795                     |       |      | -15.143     | 51.932      |
| 1     | DER                     | -42.849                   | .868  | .405 | -498.433    | 412.736     |
|       | DTA                     | 145.883                   | 1.827 | .852 | -591.251    | 883.017     |
| a. Dependent Variable: RONW |

Source: Computed through SPSS from the data collected from the website www.moneycontrol.com

### Table 7:

**Regression Analysis of Dependent Variable - ROA and Independent Variables - DER & DTA**

| Model Summary | Model | R       | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---------------|-------|---------|----------|-------------------|-----------------------------|---------------|
|               | 1     | .847<sup>a</sup> | .718     | .435              | 66.42246                    | 2.788         |
| a. Predictors: (Constant), DTA, DER |
| b. Dependent Variable: ROA |

**Coefficients**

| Model | Unstandardized Coefficients | Standardized Coefficients | T | Sig. | 95.0% Confidence Interval for B |
|-------|----------------------------|---------------------------|---|------|-------------------------------|
|       | B                          | Std. Error                | Beta |      | Lower Bound | Upper Bound |
| (Constant) | 739.514            | 302.033                   |       |      | -560.027     | 2039.056     |
| 1     | DER                     | 2820.778                  | 2.989 | .688 | -14832.541   | 20474.097    |
|       | DTA                     | -5778.903                 | -3.784 | -.871 | -34341.899   | 22784.093    |
| a. Dependent Variable: ROA |

Source: Computed through SPSS from the data collected from the website www.moneycontrol.com

### Table 8:

**Regression Analysis of Dependent Variable - RLTF and Independent Variables - DER & DTA**

| Model Summary | Model | R       | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---------------|-------|---------|----------|-------------------|-----------------------------|---------------|
|               | 1     | .942<sup>a</sup> | .887     | .775              | 2.94523                     | 2.547         |
| a. Predictors: (Constant), DTA, DER |
| b. Dependent Variable: RLTF |

**Coefficients**

| Model | Unstandardized Coefficients | Standardized Coefficients | T | Sig. | 95.0% Confidence Interval for B |
|-------|----------------------------|---------------------------|---|------|-------------------------------|
|       | B                          | Std. Error                | Beta |      | Lower Bound | Upper Bound |
| (Constant) | 13.707            | 13.392                    |       |      | -43.916     | 71.330      |
| 1     | DER                     | -205.021                  | -3.094 | -1.127 | -987.785    | 577.744     |
|       | DTA                     | 427.317                   | 3.986  | 1.452 | -839.193    | 1693.827    |
| a. Dependent Variable: RLTF |

Source: Computed through SPSS from the data collected from the website www.moneycontrol.com
resources to make a sizable profit that has a potential to keep it liquid. Therefore, the question arises only when it is possible to avoid the possibility of liquidation and bankruptcy by making very simple profits at the same time. Although most of the theories indicates that, the two are negatively interdependent and cannot be increased simultaneously, whereas some companies have proven this false with high liquidity as well as high leverage. This creates the validity and applicability of the principle of liquidity and making profit a concept for debate. Hypothesis of this study proves that capital structure and profitability are positively associated whereas pecking order theory states the negative association of these two. It prioritizes debt financing over equity financing when internal financing is deficient for the financial needs of the company means less dependence on internal financing and debt financing.

9. Source of Funding
None.

10. Conflict of Interest
None.

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