

Impact Of Capital Structure On Financial Performance: A Special Reference To Depressed Companies Applied For Bankruptcy In NCLT

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ABSTRACT

There are many important theories and assumptions that explain and study this topic very well, such as: Net Income, Net Operating Income, Traditional, M & M hypothesis and pecking order theory.

We find that the relationship between capital structure and business performance is an interesting aspect and worth exploring. Therefore, we started a thorough literature review and found a research gap showing the relationship between capital structure and financial performance of a company from the perspective of capital structure theories in the Insolvency context. Since researchers are studying the relationship between capital structure and corporate performance in many different countries and there is nothing like insolvency context, we decided to study about it.

Over the past decade, the financial performance of the companies has been negatively affected by their leverage ratio. Specifically, the more debt the company takes on in relation to its assets to finance its operations, the worse the company's financial performance. With this study, we provide more evidence of the relationship between capital structure and financial performance and enlighten contribution in depression of companies.

Our research and analysis indicate that for Indian listed businesses, there is a negative correlation between capital structure and firm performance. Finally, and perhaps most significantly, our findings concur with those of Fama and French (1999) and Myers (1989), both of which discovered a negative correlation between capital structure and business performance.

Keywords: Insolvency, Capital Structure, Company Performance, NCLT, Depressed Firm.

INTRODUCTION

One could argue about what financial performance is because there are a variety of measures and other formulas that are used to quantify the financial performance of a company. These ratios can be assimilated to financial ratios derived from balance sheets and income statements (Degryse et al., 2010; Zahra & Pearce, 1989), stock market returns and their volatility (Muzir, 2011; O'Brien, 2003) and market values mixed with book values. (O'Brien, 2003)

When we look upon the potential drivers of financial performance, the capital structure of a company, that is, the debt / equity ratio, has been used as an independent variable in many studies to examine financial performance in different geographical contexts, years, company size and sectors.

The existence of a relationship between a company's capital structure and its financial performance has been a highly debated and researched topic in financial research for several decades. The starting point of the debate could be found, in many cases, in the famous theory of Miller and Modigliani in 1950s, which affirms that the performance of a company is independent of its capital structure and will not change or adapt over time.

However, Miller and Modigliani's theory is only valid in a certain theoretical context and have found little empirical support in research. Instead, numerous studies have shown that a company's capital structure and its relationship to performance is highly dependent on contextual issues such as the company's industry, strategy, growth, or country. (Berger & Bonaccorsi di Patti, 2006; Degryse et al., 2010; Lindblom et al., 2011; O'Brien, 2003) Contrary to the thesis of Miller and Modigliani, many studies have also indicated that the capital structure is a choice or an active strategy of a company and that the choice is dynamic and not frozen in time. (O'Brien, 2003). Also, many others found a negatively statistically significant effect on the relationship between capital structure and firm performance. (Dao & Ta, 2020; Le & Phan, 2017).

However, the relationship between capital structure and performance has not been fully proven in Indian research or in Indian companies. In addition, capital structure and performance are linked to other established theories in finance, such as signaling (Lindblom et al., 2011; Muzir, 2011; Rocca & Rocca, 2007), pecking-order theory (Myers, 1984; O'Brien, 2003), agency theory (Myers, 1984), trade-off theory, the efficiency-risk hypothesis, and franchise-value hypothesis (Berger & Bonaccorsi di Patti, 2006). Subsequently, when applying some of these corporate finance theories, such as agency theory and trade-off theory, a positive correlation was found between capital structure as a performance engine, if theories such as pecking order-theory suggest that performance causes the capital structure. (Berger & Bonaccorsi di Patti, 2006; Myers, 1984).

All these theories have identified relationships between capital structure and company performance from different angles and approaches. The relationship that we are specifically studying will then obviously be the capital structure as the cause or spring of performance, or as it could be said, the capital structure will be an independent variable while performance is a dependent variable, which is analyzed in this study. We agree in this context, as we want to examine how a financial measure and therefore a financial decision, such as capital structure, can affect the performance of a company.

Depressed Company

Financially 'depressed' companies are characterized by demonstrating negative profitability trends annually (year on year) and displaying indications of technical insolvency. Additionally, companies that exhibit negative or declining performance in either profitability or solvency indicators for three consecutive years within a five-year period are classified as 'depressed' (Sabela et al, 2018, p. 2).

NCLT

The National Company Law Tribunal (NCLT) is a quasi-judicial body in India that adjudicates issues relating to Indian companies. This was the Companies Act 2013 and became operational from 1 June 2016 only after V. Balakrishna Eradi committees' recommendations were supported via a gazette notification to transpose Parts A & B of Insolvency and Bankruptcy Code in India, dealing with company insolvency or liquidation and individual bankruptcy respectively. (Trilegal, 2018)

RESEARCH GAP

The relationship between capital structure and company performance is examined in the literature. According to Ebaid (2009) and Kyereboah-Coleman (2007), there are few studies on the relationship between capital structure and company performance, and most of them focus on developing markets like Asia or East Europe. However, no research examines the relationship between capital structure and the performance of Indian companies filed in NCLT. Therefore, we intend to fill this gap by conducting research on Indian non-financial companies filed in NCLT from 2018 to 2023.

Also, capital structure and impact on performance have been studied for many years, but researchers have found different results in different contexts. Consequently, there is no specific result that can be generalized in the measurement of the relationship between the capital structure and the performance of the company, so there is constant additional research in different contexts to acquire a more complete understanding of the dynamics of capital structure and solid performance.

Therefore, it is very interesting to see the relationship. Companies are integrating into financial markets and using financial services, in which indebtedness and leverage play an important role. Given that we know that debt ratios influence capital structure and therefore financial performance, and those Indian companies are heavily indebted on average (Song, 2005). Therefore, we would like to determine the relationship between capital structure and business performance of Indian non-financial companies filed in NCLT.

Since we are interested in the capital structure and performance of companies, so we refine the research problem that is:

“How to describe the relationship between the capital structure and the performance of Indian companies filed in NCLT during the period 2018-2023?”

Our objective is to determine whether there is a link between the capital structure and the performance of the company in the context of Indian listed companies and how the capital structure leads to distress and finally depression of the company.

In addition, we have created a sub-question to determine if this relationship could be influenced by the industry to which a particular company belongs. Therefore, we formulate our sub-question for this study as follows:

"How can the industry affect the relationship between the capital structure and the performance of Indian companies filed in NCLT during the period 2018-2023?"

The main objective of this study is to find an answer to the research question and sub-question. When we answer them, we hope to find three possible scenarios. First, it can be said that the relationship between the capital structure and the performance of the company is positive. This means that the use of leverage will increase business performance. Second, we can see that the relationship between the capital structure and the performance of the company is negative, and the leverage reduces the performance of the company. Third, we can see that there is no relationship between the capital structure and the performance of the company. Given that other researchers find a positive or negative relationship between capital structure and company performance, we would expect a relationship. However, we do not know the meaning of the relationship. Therefore, finding the address is also part of our research goal. In addition, we would like to examine whether the industry influences the relationship between capital structure and company performance.

Therefore, the objectives of the research can be summarized as follows:

- Examination of the relationship between capital structure and company performance in the context of Indian companies filed in NCLT.
- Study the impact of the industry on the relationship between capital structure and company performance in the context of Indian companies filed in NCLT.
- Investigate the role of company characteristics on the relation between financial distress and capital structure

CAPITAL STRUCTURE

As mentioned, capital structure refers to the mix of debt and equity that a company maintains with different sources of financing, especially long-term funds. (Margaritis & Psillaki, 2010; Rocca and Rocca, 2007) Basically, it is a framework that shows how equity and debt are used to finance business operations. Finding an optimal capital structure or a combination of debt and equity can be considered important, as it will maximize the value of the business. In this sense, the capital structure can be interpreted in terms of the target capital structure to achieve a balance between risks and rewards to maximize the value of the business. Therefore, the main objective of the capital structure is to contain the optimal combination of debt and equity.

Capital Structure in Financial Theory

Starting from a theoretical starting point that could be defined mainly as traditional financial discourse, in recent decades several more recent theories have emerged, at least in comparison with the theory of Miller and Modigliani, to explain the choice of capital structure for a company. This section covers *the trade-off theory*, *the agency cost theory* and *the pecking-order theory*.

The Trade-Off Theory

The compensation theory explains the choice of business leverage as a trade-off between the benefits and the costs of debt. Balancing the costs and benefits of borrowing and maintaining business assets is considered a determining factor in a business's optimal debt ratio. The main goal of a business is to replace debt with equity, and vice versa, to find an optimal debt ratio and maximize the value of the business. Therefore, the compensation theory can be summarized in such a way that it compensates for the various benefits and costs associated with leverage to achieve an optimal capital structure. Debt also has a disciplinary role due to the decrease in free cash flow. (Myers, 1984, p. 577,578)

When a company adjusts the optimal debt ratio, the costs and therefore the delays, called adjustment costs, make the optimal capital structure of each company different (Myers, 1984, p. 576). Graham and Harvey (2001) suggest that firms should determine their optimal capital structure and strive to achieve and keep it. It goes without saying that there are large disparities in the optimal capital structure between companies.

Tax protection is also an significant point of the theory. Corporations can deduct interest payments on debt from taxes, which increases the corporation's net income. To maximize tax protection, companies can choose higher debt levels (Graham, 2000). Therefore, companies with higher debt levels are expected to perform better financially. However, large debts can create bankruptcy risk and increased agency costs between owners and managers (Brealey & Myers, 2003). As we can see, the theory explains not only taxes and tax protections, but also the impact of financial difficulties due to high debt. They suggest that a firm's target capital structure is determined by taxes, financial difficulties (the cost of bankruptcy), and agency conflict (Graham, 2000).

According to the trade-off framework, companies set a target leverage ratio and gradually move it closer together, in the same way that a company adjusts its dividends to get closer to a target payout ratio (Myers, 1984). Many studies support this framework such as Hovakimian et al. (2001), Fama & French (2002) Gaud et al. (2005) Smith & Watts (1992) Byoun & Rhim (2003). These studies suggest that companies are approaching their target ratio in the long or short term, and that the target debt ratio and the real debt ratio are important aspects to consider.

The Theory of Agency Cost

Jensen & Meckling (1976), the founders of the agency cost theory, define the agency relationship within the firm as

follows: on its behalf, which implies the transfer of decision-making power to the agent.

According to agency cost theory, the path of the professional management style, which is the separation of ownership and management, can lead to agency conflicts caused by insufficient workload of the manager, participating in advantages, choosing inputs or products according to their own preferences. For these reasons, a business may not be maximizing its value. Conversely, for these reasons, one can maximize one's wealth and utility (Berger & Bonaccorsi di Patti, 2006).

However, theory suggests that choosing the best / optimal capital structure can alleviate agency conflicts and reduce agency costs. Therefore, according to the theory, a high leverage ratio helps a company reduce trading costs and mitigate trading conflicts. This leverage ratio also encourages managers to act more in the interest of shareholders. This increases the value of the business.

The Pecking-Order Theory

The pecking order theory was developed by Stewart Myers in 1984 to describe the financial behavior of companies that he observed, and this is of great importance for capital structure decisions. The three points of Myers (1984, p. 581) are listed below:

- 1) Managers want to keep dividends to shareholders stable over time despite possible fluctuations in earnings, stock prices, or investment opportunities.
- 2) Administrators prefer internal to external financing, that is, funds raised through the issuance of new debt or equity.
- 3) If external financing is required, managers choose the lowest risk option first and so on. Myers ranks various stocks based on their perceived risk, ranging from pure debt at one end of the spectrum to common stocks at the other end of the spectrum.

In fact, the cost of debt financing is lower than that of equity financing, the differences in market valuation and management being smaller than in the case of equity financing. However, in order not to enter this scenario with external financing, it is argued that companies still have a financial gap and, therefore, can finance their profitable projects internally. As such, financial constraints could be defined as cash and securities owned by the business. (Myers, 1984, p. 590)

RESEARCH METHODOLOGY

In our study, we use an explanatory research model when we examine the relationships between the variables capital structure and company performance, apply quantitative strategies, and submit our data to statistical tests. Furthermore, the objectives of our research clearly show that our objective is to explain the relationship between capital structure and company performance.

Design of the investigation

For this study, we chose a cross-sectional research estimate. The main reasons are that our work uses a quantitative comparison between independent variables and dependent variables, and that data is collected at a single time and simultaneously. These are also the main reasons why we did not choose an experimental device.

In addition, we have systematic and standardized methods to measure variables to study the relationships between variables and identify patterns of association. Finally, "with a cross-sectional plan, it is only possible to examine the relationship between the variables" (Bryman & Bell, 2007). Given that we want to discover the link between the capital structure and the performance of the company, a transversal conception is the one that best suits our study.

DATA COLLECTION

We chose companies that were filed in NCLT (National Company Law Tribunal) from 2018 to 2023 because we wanted to conduct this study mainly with relevant data from India. After all, we needed two types of data, namely, measuring business performance and measuring capital.

Since we wanted to get data on Indian public companies, we had two ways to get it. First, we could get the data from the companies' annual reports, which is time-consuming. Second, we could pull the data from Prowess financial database.

The objective of this paper is to empirically examine the relationships between capital structure and corporate performance of Indian companies filed in NCLT during the period 2018 - 2023. Since we want to find relationships between capital structure and business performance, the best option is regression analysis. Therefore, we divide our variables into three groups, namely dependent, independent, and control variables. Based on our question, sub-question, and research objective, we decided that business performance measures are dependent variables; Capital structure measures are independent variables. We have also used control variables to control the dependent variables "because we suspect that they might somehow spoil the relationships which we are trying to study (Punch, 2005)".

Next, we will explain in detail which dependent variables, independent variables, and control variables, including regression models, we use in this study.

Dependent variables

To determine the company's success, we employed three accounting-based financial performance parameters as dependent variables: Return on Asset (ROA), Return On Equity (ROE), and Return On Investment (ROI). These proxies are also the most widely used performance measures. Financial ratios from balance sheets and income statements are represented by these accounting measures. Majumdar & Chhibber (1999), Abor (2005), Demstz & Lehn (1985), Gorton & Rosen (1995), Mehran (1995), Ang et al. (2000) are some of the researchers those used these accounting-based measurement of financial performance. Furthermore, in this study, we used more than one performance proxy because we wanted to see if the independent variables explained the performance measures at the same level. Tesema (2024) asserted that there is a noteworthy adverse correlation between LTD and both NOP and ROA. This suggests that these variables are inversely proportional, signifying that a rise in LTD corresponds to a reduction in both NOP and ROA.

Return On Equity

The return on equity (ROE) ratio is used to calculate the return on a shareholder's investment (Brigham & Houston 2012, p. 99). It demonstrates management's ability to generate additional earnings for shareholders (Tezel & McManus 2003, p. 67). To put it another way, ROE assesses a company's profitability by revealing how much profit it creates with the money invested by shareholders. Because it provides information from both sides of the balance sheet and income statement, ROE is popular and valuable among researchers and academics. It's one of the accounting measurements that tells you how much money you made as a shareholder. Traders frequently use ROE to identify companies with faster growth in total shareholder equity. As a result, in order to maximise shareholder wealth, stock prices will rise (Rothschild 2006, p. 28). The return on equity (ROE) is calculated by dividing net income available to shareholders by shareholders' equity (Phillips & Sipahioglu, 2004, p. 38). The return on equity (ROE) is calculated by dividing net income by equity (Bistrova et al., 2011, p. 659)

The return on equity (ROE) is calculated by dividing net profit by equity (Bistrova et al., 2011, p. 659). The following are the three ratio components that make up Return on Equity:

Profit Margin = Net Income / Sales

Asset Turnover = Sales / Assets

Financial Leverage = Assets / Equity

$$ROE = \frac{Net\ Income}{Sales} \times \frac{Sales}{Total\ Assets} \times \frac{Total\ Assets}{Total\ Equity}$$

Formula 1:

After this calculation;

Formula 2: Return on equity = net income / total equity

Return On Investment (ROA)

"Because it measures profit against all of the assets a division utilises to achieve those earnings, ROA is an useful internal management ratio. As a result, it serves as a means of assessing the division's profitability, performance, and efficacy. It's also more acceptable here because division managers are rarely involved in fundraising or determining the debt-to-equity ratio." (Kristy & Susan, 1984).

ROA gives useful information about a company's financial success in terms of generating income from assets. It depicts a corporation's profit margin as a percentage of its total assets. As a result, it is regarded as a metric of efficiency. A company with a high return on assets (ROA) is good at converting assets into earnings. As a result, it's also known as a profit or productivity ratio (Casteuble, 1997, p. 54).

The return on investment (ROI) is widely regarded as a reliable financial performance ratio. As a result, an increasing ROA suggests that a company is becoming more profitable, whereas a falling ROA shows that a company is becoming less profitable. Increased ROA can be achieved in two ways: first, by increasing net income, and second, by improving the efficiency of current assets (Casteuble, 1997, p. 55).

We present a ROA formula, which is defined as "... asset profitability, evaluated as net profit divided by total assets" (Bistrova et al., 2011, p. 659).

Formula 3: ROA: Net Income / Total Wealth

Return On Investment (ROI)

Furthermore, this metric is thought to be more accurate than others that rely solely on the balance sheet. The balance sheet (finance) and the income statement are the two financial statements that ROI is based on (profit).

Furthermore, "the link between profit and the investment that generates profit is one of the most extensively used metrics of company performance," according to Friedlob & Franklin (1996, p. 16). Return on investment (ROI) is a quantitative assessment of a company's investment and results.

As a result, ROI is frequently employed to assess a company's financial performance and used as a simple performance evaluation tool.

Formula 4: ROI: Profit / Investment

Independent Variables

We use measures of capital structure as independent variables depending on our research question, sub-question, and objective. For the independent variables, we link short-term debt, long-term debt, and total debt to total assets. In the literature, many researchers use the leverage ratio as a measure of capital structure, such as Kyereboah-Coleman (2007), Abor (2005), Abor (2007), Titman & Wessels (1988), Rajan & Zingales (1995), Dessi & Robertson (2003), Akhtar (2005) and Fattouh et al. (2005).

Our independent variables are shown below;

- Short-term debt (SDR) relative to total assets
- Long-term liabilities (LTD) over total assets
- Total debt (TD) in relation to total assets

These variables do not include liabilities such as reserves or untaxed liabilities, so they are more appropriate measure of capital structure. (Song, 2005, p. 7)

Control Variables

After creating the dependent and independent variables, we plan to guide the characteristics of the company using the factors that potentially affect the capital structure mentioned above in the literature review, namely the growth of the company, the size of the company, intangible assets, and industry. For the purposes of this paper, we intend to use revenue growth for our business growth control variable.

In this paper, we use the natural logarithm of total assets to measure company size, as is firmly established in previous research, and the company's assets as such appear to be a plausible denominator of size as such.

For intangible assets, we use the ratio of intangible assets to total assets in our work. The reason is that this measure is widely used by many previous researchers such as Margaritis & Psillaki (2007), Degryse et al. (2010).

Regression model

Regression is one of the most popular and widely used statistical techniques in the social sciences. With a multiple regression model, researchers can examine the relationship between a response variable and more than one explanatory variable. In fact, researchers can use statistical models to evaluate explanations for social phenomena (Scarborough & Tanenbaum, 1998, p. 29). It is also useful in the social sciences because research generally requires more than one source of information to make reasonable predictions (Hutcheson & Sofroniou, 1999, p. 71).

Identify the relationship between the capital structure and the performance of the company that answers our research question; "How to describe the relationship between the capital structure and the performance of Indian companies filed in NCLT during the period 2017-2021?"

We use regression models based on independent variables, dependent variables, and control variables, as discussed earlier as follows:

Model 1: the relationship between dependent variables (ROA, ROE, ROI) and independent variables (LTD / TA and STD / TA)

$$\text{ROA, ROE, ROI} = \beta_0 + \beta_1 \text{ STD / TA} + \beta_2 \text{ LTD / TA} + \beta_3 \text{ height} + \beta_4 \text{ growth} + \beta_5 \text{ intangible} + \gamma \text{Dind} + \gamma \text{Dyear}$$

Model 2: the relationship between dependent variables (ROA, ROE, ROI) and independent variables (STD / TA)

$$\text{ROA, ROE, ROI} = \beta_0 + \beta_1 \text{ STD / TA} + \beta_2 \text{ height} + \beta_3 \text{ growth} + \beta_4 \text{ intangible} + \gamma \text{Dind} + \gamma \text{Dyear}$$

Model 3: the relationship between dependent variables (ROA, ROE, ROI) and independent variables (LTD / TA)

$$\text{ROA, ROE, ROI} = \beta_0 + \beta_1 \text{LTD / TA} + \beta_2 \text{height} + \beta_3 \text{growth} + \beta_4 \text{intangible} + \gamma \text{Dind} + \gamma \text{Dyear}$$

Model 4: the relationship between dependent variables (ROA, ROE, ROI) and independent variables (TD / TA)

$$\text{ROA, ROE, ROI} = \beta_0 + \beta_1 \text{TD / TA} + \beta_2 \text{height} + \beta_3 \text{growth} + \beta_4 \text{intangible} + \gamma \text{Dind} + \gamma \text{Dyear}$$

In which:

ROA: Return on asset (Net Income / Total Assets)

ROE: Return on equity (Net Income / Shareholder's Equity)

ROI: Return on investment (Profit / Investment)

STD/TA: Short-term debt to total asset

LTD/TA: Long-term debt to total asset TD/TA: Total debt to total asset

Size: Natural logarithm of total assets

Growth: Annual change on sales

Intangible: Intangible assets to total assets

D_{ind}: Industry dummy

D_{year}: Year dummy

To answer the research sub-question; "How can the industry affect the relationship between the capital structure and the performance of Indian companies filed in NCLT during the period 2017-2022?" However, we only used Model 1 above to examine it. This is based on our assumption that the Regression model 1 includes all the variables used in the study.

DATA ANALYSIS

Descriptive analysis starting with **model 1**, the descriptive statistics in regard to all dependent variables and excluding outliers are given below.

Table 1: Descriptive Analysis (Model 1)

Dependent Variable: ROA											
Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	LTD/TA	STD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-	-
STD/TA	1645	.000	46.453	6.105	7.354	-.180	.092	1.00	-	-	-
Size	1645	1.596	8.609	6.164	1.028	.329	.321	.067	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.027	-.023	-.048	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.057	-.129	.806	1.00

Dependent Variable: ROE											
Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	LTD/TA	STD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-	-
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Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.057	-.129	.806	1.00

Dependent Variable: ROI											
Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	LTD/TA	STD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-	-
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Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.057	-.129	.806	1.00

Short-term and long-term debt forms of leverage show negative relationships with both return on assets (ROA) and return on investment (ROI). Only with short-term debt does return on equity (ROE) exhibit a negative correlation. The research generally points to a negative relationship between sample leverage and performance (ROA, ROI, and ROE).

There is a negative connection between all dependent variables (ROA, ROI, and ROE) and intangible assets, suggesting that a larger proportion of intangible assets is linked to worse performance.

Strong positive connections are shown between the two forms of leverage: short-term and long-term debt. The three dependent variables show substantial positive correlations between the short-term and long-term debt ratios and size and intangible assets, suggesting that more leverage is linked to larger size and more intangible assets.

Overall, the analysis shows that performance has a negative link with leverage as well as a negative correlation with intangible assets. Both forms of leverage are substantially correlated with size and intangible assets, and there is a strong positive association between short-term and long-term debt types of leverage.

Next Descriptive analysis with **model 2**, the descriptive statistics in regard to all dependent variables and excluding outliers are given below.

Table 2: Descriptive Analysis (Model 2)

Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	STD/TA	Size	Growth	Intangibl e
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	-	-	-	-
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STD/TA	1645	.000	46.453	6.105	7.354	-.180	1.00	-	-	-
Size	1645	1.596	8.609	6.164	1.028	.329	.067	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.023	-.048	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.057	-.129	.806	1.00

All dependent variables (ROA and ROE) have a negative association with the long-term debt ratio; however, this link is mostly inconsequential.

The long-term debt ratio and Return on Investment (ROI) have a considerable but not very strong negative association, which points to a little effect on ROI.

Like the first model, the long-term debt ratio has a substantial positive connection with intangible assets.

This suggests that the presence of intangible assets grows along with the long-term debt ratio. The long-term debt ratio shows a substantial correlation with size, like the first model, showing that larger companies often have a greater long-term debt ratio.

In conclusion, the hypothesis contends that the long-term debt ratio exhibits a strong but moderate negative association with ROI, but a primarily negligible negative correlation with the dependent variables (ROA, ROE). Furthermore, the long-term debt ratio significantly positively correlates with both the size of the companies and intangible assets.

Then Descriptive analysis with **model 3**, the descriptive statistics in regard to all dependent variables and excluding outliers are given below.

Table 3: Descriptive Analysis (Model 3)

Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	LTD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052	1.00	-	-	-

						.033				
STD/TA	1645	.000	46.453	6.105	7.354	-.180	.092	-	-	-
Size	1645	1.596	8.609	6.164	1.028	.329	.321	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.027	-.048	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.129	.806	1.00

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LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-
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Size	1645	1.596	8.609	6.164	1.028	.329	.321	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.027	-.048	1.00	-
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LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-
STD/TA	1645	.000	46.453	6.105	7.354	-.180	.092	-	-	-
Size	1645	1.596	8.609	6.164	1.028	.329	.321	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.027	-.048	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.129	.806	1.00

All three of the dependent variables (ROA, ROI, and ROE) show a strong and adverse association with the short-term debt ratio. This implies a link between rising short-term debt and declining performance (ROA, ROI, and ROE). Across all dependent variables, the short-term debt ratio shows a positive association with both size and growth.

This suggests that the size and expansion of the organizations under study rise in tandem with the short-term debt ratio.

In terms of ROA and ROE, growth and intangible assets are favorably correlated. This shows that rising ROA and ROE are related to rising intangible asset values.

In conclusion, the analysis shows that worse performance (ROA, ROI, and ROE) is highly connected with a greater short-term debt ratio. Additionally, there is an association between size and growth and the short-term debt ratio. Additionally, there is a favorable correlation between growth and intangible assets, especially regarding ROA and ROE.

Then Descriptive analysis with **model 4**, the descriptive statistics regarding all dependent variables and excluding outliers are given below.

Table 4: Descriptive Analysis (Model 4)

Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	TD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-
STD/TA	1645	.000	46.453	6.105	7.354	-.180	.092	-	-	-
Size	1645	1.596	8.609	6.164	1.028	.329	.321	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.027	-.048	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.129	.806	1.00

Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	TD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-
STD/TA	1645	.000	46.453	6.105	7.354	-.180	.092	-	-	-
Size	1645	1.596	8.609	6.164	1.028	.329	.321	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-.265	-.027	-.048	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.129	.806	1.00

Variables	N Valid	Minimum	Maximum	Mean	Standard Deviation	ROA	TD/TA	Size	Growth	Intangible
ROA	1645	-59.121	117.952	2.120	12.1.65	1.00	-	-	-	-
LTD/TA	1645	.000	77.846	12.003	13.056	-.052 .033	1.00	-	-	-
STD/TA	1645	.000	46.453	6.105	7.354	-.180	.092	-	-	-

Size	1645	1.596	8.609	6.164	1.028	.329	.321	1.00	-	-
Growth	1645	-99.912	106500.0	106.484	2879.233	-265	-.027	-	1.00	-
Intangible	1645	.000	86.865	22.905	20.816	-.120	-.078	-.129	.806	1.00

All three of the dependent variables (ROA, ROI, and ROE) show a definite and substantial negative association with the long-term debt ratio. This suggests that weaker performance (ROA, ROI, and ROE) is linked to larger long-term debt ratios.

Across all dependent variables, the long-term debt ratio shows a positive association with both size and growth.

This shows that greater size and greater growth in the businesses under study are related to a rise in the long-term debt ratio.

In conclusion, the research demonstrates a substantial inverse relationship between the three dependent variables (ROA, ROI, and ROE) and the long-term debt ratio (independent variable). The long-term debt ratio is also positively correlated with size and growth, demonstrating that bigger size and faster growth are related to higher long-term debt ratios.

Regression Analysis

One dependent variable (ROA, ROI, or ROE), two independent variables (LTD/TA, STD/TA), three control variables, industry dummies, and year dummies were used in each of the three regression studies. For each dependent variable, the goal was to investigate the connection between capital structure and company performance.

Table 5: Regression of Model 1

Dependent	ROA-Regression1			ROE-Regression2			ROI-Regression3		
	B	β	sig	B	β	Sig	b	β	sig
LTD/TA	-.133	-.153	.000	-.444	-.158	.000	-.252	-.194	.000
STD/TA	-.398	-.249	.000	-1.384	-.277	.000	-.568	-.236	.000
Size	3.571	.310	.000	12.066	.343	.000	6.630	.383	.000
Growth	.001	.266	.000	.001	.062	.004	.001	.092	.000
Intangible	-.020	-.035	.151	-.080	-.045	.163	-.032	-.038	.118
Constant	-15.213			-58.695			-29.035		
Adj. R ²	.857			.759			.848		

Both STD/TA and LTD/TA have a negative correlation with ROA and are statistically significant. Reduced ROA is the outcome of rising LTD/TA or STD/TA. Size and growth, which serve as controls, are statistically significant and behave as predicted. 85.7% of the variance in ROA is explained by the modified R² of 0.857.

Both LTD/TA and STD/TA are highly significant and inversely linked with ROE, like Regression 1. ROE is more impacted by LTD/TA and STD/TA than ROA is. Size and growth, which serve as controls, are highly significant and behave as predicted. With an adjusted R² of 0.759, the variance in ROE is explained by 75.9%.

Each LTD/TA and STD/TA are highly significant in Regression 3 and have a negative correlation to ROI. When contrasted with ROA and ROE, the impact on ROI is minimal. Size and growth, which serve as controls, are highly significant and behave as predicted. 84.8% of the variation in ROI is explained by the adjusted R², which is 0.848.

For listed Indian enterprises, the study finds an inverse association among capital structure (LTD/TA, STD/TA) and company performance. Variations in independent variables have the greatest impact on ROE, whereas they have the least impact on ROA. The dependent variables are considerably impacted by the control factors (Size and Growth). Contrary to predictions, intangibility did not demonstrate statistical significance.

Table 6: Regression of Model 2, Model 3 and Model 4 for ROA

Dependent	ROA-Regression4			ROA-Regression5			ROA-Regression6		
	B	β	sig	B	β	sig	B	β	sig
LTD/TA	-.126	-.146	.000	-	-	-	-	-	-
STD/TA	-	-	-	-.413	-.263	.000	-	-	-
TD/TA	-	-	-	-	-	-	-.182	-.249	.000
Size	3.539	.310	.000	3.370	.267	.000	3.697	.324	.000
Growth	.001	.273	.000	.001	.268	.000	.001	.271	.000
Intangible	-.028	-.049	.053	-.034	-.060	.053	-.020	-.035	.160
Constant	-16.614			-11.892			-16.485		
Adj. R ²	.793			.844			.828		

Statistics show that LTD/TA, STD/TA, and TD/TA are highly significant and negatively correlated with ROA. A moderate explanation of the variance in ROA is shown by adjusted R² values of 79.3%, 84.4%, and 82.8%, respectively. Size and growth are the controls, and both are highly significant as predicted.

Table 7: Regression of Model 2, Model 3 and Model 4 for ROE

Dependent	ROE-Regression7			ROE-Regression8			ROE-Regression9		
	B	β	sig	B	β	sig	B	β	sig
LTD/TA	-.509	-.190	.000	-	-	-	-	-	-
STD/TA	-	-	-	-1.436	-.286	.000	-	-	-
TD/TA	-	-	-	-	-	-	-.760	-.325	.000
Size	11.773	.350	.000	10.500	.303	.000	13.148	.369	.000
Growth	.001	.069	.003	.001	.059	.009	.001	.066	.003
Intangible	-.114	-.067	.008	-.125	-.071	.003	-.066	-.037	.008
Constant	-60.641			-49.526			-66.649		
Adj. R ²	.700			.747			.749		

Statistics show that LTD/TA, STD/TA, and TD/TA are highly significant and negatively correlated with ROE. A moderate explanation of the variance in ROA is shown by adjusted R2 values of 70.0%, 74.7%, and 74.9%, respectively. Size and growth are the controls, and both are highly significant as predicted.

Table 8: Regression of Model 2, Model 3 and Model 4 for ROI

Dependent	ROI-Regression10			ROI-Regression11			ROI-Regression12		
	B	β	sig	B	β	sig	B	β	sig
LTD/TA	-.228	-.176	.000	-	-	-	-	-	-
STD/TA	-	-	-	-.554	-.233	.000	-	-	-
TD/TA	-	-	-	-	-	-	-.328	-.300	.000
Size	6.632	.385	.000	5.800	.339	.000	.851	.396	.000
Growth	.001	.097	.000	.001	.092	.000	.001	.095	.000
Intangible	-.056	-.065	.009	-.076	-.089	.000	-.027	-.031	.007
Constant	-31.068			-23.771			-31.928		
Adj. R ²	.792			.822			.834		

Statistics show that LTD/TA, STD/TA, and TD/TA are all inversely associated to ROI. A moderate explanation of ROI variance is indicated by the corrected R2 values, which are 79.2%, 82.2%, and 83.4%, respectively. Size and growth are the controls, and both are highly significant as predicted.

CONCLUSION

The link between capital structure and company performance is supported empirically by a variety of research, as we note in the literature review. While some researchers have discovered a linkage, others have discovered a relationship that is detrimental.

As a result, there are differences in the connection between nations. Our research and analysis indicate that for Indian listed businesses, there is a negative correlation between capital structure and firm performance.

Finally, and perhaps most significantly, our findings concur with those of Fama & French (1999) and Myers (1989), both of which discovered a negative correlation between capital structure and business performance. Furthermore, we discover that there is an unexpected resemblance in the way that capital structure and company performance relate across industries. Our study goals align with our expectation that there is a connection between capital structure and company performance.

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