



Determinants of Stock Price Movements in India based on technical indicators

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Abstract – Specifically, the purpose of this study is to investigate the impact that the capital structure of publicly traded companies in India has on the actual financial performance of those companies. What constitutes a company's capital structure is the proportion of debt to equity that it employs in order to finance its expansion and day-to-day operations. This is an important decision because it affects profits, risk, and the long-term survival of the business. The management of a company needs to make a significant financial decision in order to decide how to find the optimal balance between the various ways to make money. Over a period of ten years, from 2014 to 2024, the research investigates one hundred non-financial companies that are listed on the National Stock Exchange (NSE). You can determine how well a company is doing financially by looking at its Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). These metrics are all broken into three categories. Determining the capital structure can be accomplished through the use of a number of different ratios, including the debt-to-equity ratio, the long-term debt ratio, and the short-term debt ratio. For the purpose of analyzing the connections between a wide range of factors, the research utilized panel data regression techniques, more specifically Fixed Effects and Random Effects models.

Keywords- Capital structure, financial performance, debt-to-equity ratio, long-term debt ratio, short-term debt ratio, Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), panel data analysis, fixed effects model, random effects model, non-financial firms, National Stock Exchange (NSE), corporate finance, profitability analysis, risk management, firm performance, India, 2014–2024 study.

I. CHAPTER 1: INTRODUCTION

1.1 Context of Research

The capital structure of a company is one of the most difficult aspects of making financial decisions because it has an impact on how well a company can compete and how long it can continue to operate. It is a term that describes the precise proportion of debt (both short-term and long-term), common equity, and preferred equity that a company deploys in order to finance the acquisition of its assets. Ever since the groundbreaking paper that Modigliani and Miller published in 1958, which stated that capital structure does not matter in a market that is frictionless, financial economists have been searching for the "best" capital structure that reduces the weighted average cost of capital (WACC) and increases shareholder wealth. When India first opened its doors to the rest of the world in 1991, the history of corporate finance in India has undergone significant transformations.

Before this, Indian companies were required to adhere to a great deal of regulations and had a difficult time obtaining funds from places all over the world. Immediately following the implementation of liberalization, the economy became more open, which enabled businesses to gain access to international debt markets, issue Global Depository Receipts (GDRs), and increase the level of activity in the domestic equity market. As Indian companies began to compete with businesses from all over

the world, the effectiveness of their capital structure became a factor in determining how well they could compete on an international level. There are a variety of companies in India that are currently listed on the stock market. These companies include large, traditional conglomerates such as Tata and Reliance, as well as rapidly expanding software startups that are listed on the "NSE Emerge" platform. When it comes to the manner in which they combine their financial resources, each of these groups faces a unique set of challenges and opportunities.

1.2 Problem Statement

The correlation between capital structure and financial performance does not exhibit uniform consistency. The Agency Theory contends that debt-holders and equity-holders have different interests, which could result in problems. On the other hand, the Trade-off Theory asserts that debt can be beneficial in terms of compliance with taxes and in terms of keeping managers in check.

A number of factors contribute to the complexity of this relationship in India, including the following:

- When compared to other industrialized nations, India has historically had interest rates that are higher than those of other countries, which makes it more expensive to borrow money.
- Fostering a Culture of Equity The Indian government has always encouraged retail investors to invest in



equity, which has an impact on the manner in which businesses obtain funding.

- Stress in the Banking Sector The Indian banking sector has been experiencing a great deal of discomfort due to the presence of Non-Performing Assets (NPAs), which has made it difficult for a great number of publicly traded companies to obtain credit.
- Corporate Governance: The fact that listed companies have different corporate governance norms makes it more difficult for those companies to obtain low-cost capital as investment opportunities.

Even though numerous studies have been conducted, there is still no consensus regarding whether debt is beneficial to the profitability of Indian companies operating in various industries. Through an analysis of the most recent decade of financial data (2014-2024), this study intends to provide a contemporary perspective to fill this gap in knowledge.

1.3 The Importance of Study

This study is significant for several reasons, including the following: For corporate managers, it provides them with real-world proof of how leverage levels affect the bottom line, which assists them in strategically planning their finances. Specifically, it demonstrates which patterns of capital structure are more likely to result in higher returns, which can be of assistance to investors when it comes to selecting portfolios. Both the Reserve Bank of India (RBI) and the Securities and Exchange Board of India (SEBI) can enhance their regulations by gaining an understanding of how businesses respond to variations in interest rates and the availability of credit. Regarding the academic community, the research contributes to the existing body of knowledge by analyzing well-known financial theories in the context of the specific social and economic conditions that are present in a developing market such as India.

II. CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Foundations of Capital Structure

The development of capital structure theories provides a conceptual framework for understanding how organizations choose their financing mix and the impact that these decisions have on the performance of the organization.

- The Modigliani-Miller (1958) Propositions

Modigliani and Miller were pioneers in the conceptualization of a contemporary theory of capital structure. Proposition I was their initial idea, which stated that in a perfect capital market, where there are no taxes, no transaction costs, information symmetry, and competitive markets, the value of a company does not depend on the capital structure of the company with which

it is invested. According to this "irrelevance" theorem, the value of a company is solely determined by its ability to generate profits and the level of risk that is associated with the assets that it holds below the surface. On the other hand, in 1963, they changed their minds and decided to implement corporate taxes. The fact that interest payments are tax-deductible, whereas dividends are not, contributes to the "tax shield" that debt provides. This indicates that a levered company would be worth more than an unlevered company, which may imply that companies should take on all of their financing through debt, which is a conclusion that is not frequently observed in practice.

- Modgilani and Miller(1970) -The Trade-off Theory

The Static Trade-off Theory addresses the shortcomings of M&M's tax shield model by including the costs of financial distress and agency costs in its analysis. As leverage increases, businesses weigh the potential tax benefits of debt against the increased likelihood of incurring bankruptcy expenses and agency conflicts. This hypothesis states that companies make this evaluation. Having a capital structure in which the additional benefit of debt, which is tax savings, is equivalent to the additional cost, which is anticipated distress expenses, is the optimal capital structure. Because the fear of bankruptcy is now more real for businesses that do not pay their debts, the trade-off theory has become more useful in India, where the laws of bankruptcy and insolvency have recently been changed as a result of the Insolvency and Bankruptcy Code, 2016, which was recently passed.

- Myers and Majluf (1984) – Pecking Order Theory

which states that businesses adhere to a hierarchy of financing sources due to asymmetric information (managers know more about the firm's prospects than investors). This theory was formulated in response to the fact that businesses follow a hierarchy of financing sources. Initially, they would prefer to use their own money, which is known as retained earnings, followed by debt, and finally, as a last resort, they would issue shares. According to this hypothesis, companies that generate profits will have a lower level of debt because they will be able to pay for their own expansion initiatives. A great number of studies that were carried out in India have provided evidence that supports this notion. These studies have found that Indian managers frequently hesitate to dilute ownership and opt for debt solely when internal accruals are insufficient.

- Jensen and Meckling (1976)- Agency Cost Theory

They were the first to discuss agency costs, which are a result of the separation of ownership and control. Agency conflicts can be broken down into two categories:



i. It is possible for managers to prioritize their own interests, such as benefits and expanding an empire, over those of shareholders. This can lead to conflicts between managers and these shareholders. Managers can be held accountable through the use of debt because it requires them to bring in cash to pay interest. This reduces the amount of "free cash flow" that could be used for spending that is not necessary.

ii. Conflicts between bondholders and shareholders: Shareholders may take on projects that are too risky (asset substitution) because they have the potential to make a lot of money, while bondholders are required to deal with the risks. It is possible that this will lead to an overhang of debt or insufficient investment.

- Baker and Wurgler (2002) – Market Timing Theory

proposed that capital structure is the culmination of all of the efforts that have been made throughout history to time the equity market appropriately. Equity is issued by managers when they believe that the value of the shares is higher than it actually is. Either they buy back shares or they choose not to issue equity when they believe that the value of the shares is lower than it actually is. In the Indian stock market, which is driven by retail investors and experiences periodic bull runs, the timing of the market normally determines the capital structure of new or growing companies. This is because the market is driven by retail investors.

- Titman and Wessels (1988)

A significant amount of research originating from all over the world has investigated the connection between leverage and performance. During their investigation into the factors that influence a company's decision to adopt a particular capital structure, Titman and Wessels (1988) found that the factors of size, asset tangibility, and growth are significant.

- Rajan and Zingales (1995)

examined the G7 nations and came to the conclusion that the same factors were significant; however, the magnitude of the effects varied depending on the institutions. In their study they found that the equity holdings of management have a significant impact on the levels of debt. When it comes to advanced markets, debt is typically considered to be an indicator of the quality of a company. On the other hand, in many developing countries, elevated debt levels are commonly considered to be a precursor to financial instability.

2.3 A Comprehensive Review of Indian Studies

The Indian corporate sector is characterized by a unique context that is characterized by concentrated ownership (family-owned enterprises), a dynamic regulatory framework, and a financing landscape that is dominated by banks.

- Sarkar and Sarkar (2000) – study of large Indian corporations

They came to the conclusion that the ownership structure, specifically promoter holdings, has a significant impact on the decisions that are made regarding capital structure. According to what they said, strong promoter stakes frequently mean that a company does not need to rely on outside equity as much in order to exercise control over the business.

- Prasad et al. (2001)- analysis of the capital structure in developing countries.

The findings of this study revealed that the majority of Indian businesses are dependent on long-term debt from development financial institutions (DFIs). This situation changed after the 1990s, when DFIs were converted into commercial banks.

- A study conducted by Chakrabarty (2010)

companies that were listed on the National Stock Exchange (NSE) revealed that there was an inverse relationship between leverage and profitability. The Pecking Order Theory is supported by this evidence.

- According to Bhaduri (2012),

the effect of capital structure on performance is not linear; there may be an "optimal" point after which debt begins to impair performance. This is something that will be discussed further in the following paragraphs.

The manufacturing sector was the subject of research conducted by Kaur and Rao (2013). They discovered that although debt-to-equity ratios vary greatly between different industries (such as infrastructure and information technology), the general trend is that in India, businesses that have a significant amount of debt have a difficult time making money when interest rates are raised.

Varghese (2018) examined the period of time following the global financial crisis of 2008 and discovered that Indian businesses were increasing their caution with regard to debt, shifting their focus to internal accruals and rights concerns.



2.4 Research Gap

There has been a significant amount of research conducted on this subject; however, on the other hand, there are two significant gaps in literature. To begin, the majority of studies conducted in India focus on either the "determinants" of capital structure or the "impact," but very few of these studies investigate how recent changes in the economy, such as the implementation of the Goods and Services Tax (GST) and the recovery phase following the COVID, fit into these categories. In the second place, performance studies typically do not pay sufficient attention to the distinction between short-term and long-term debt. A distinction can be made between long-term structural debt and short-term debt, which includes commercial papers and working capital loans, in terms of the latter's impact on liquidity and profitability. The focus of this thesis is on the period from 2014 to 2024, which encompasses significant structural transformations in the Indian economy. The goal of this thesis is to rectify these deficiencies.

2.5 Development of Hypotheses

For the purpose of developing hypotheses, the following hypotheses have been formulated on the basis of the literature review: H1: There is a significant negative association between total leverage and the financial performance (ROA/ROE) of Indian listed companies. Long-term debt is more detrimental to performance than short-term debt due to the higher interest costs associated with long-term debt. There is a positive correlation between the size of the company and the tangibility of its assets and the financial performance of levered businesses.

III. CHAPTER 3: MATERIALS AND METHODS

3.1 Objectives of the Research (Brief Statement)

- To investigate the relationship between capital structure (debt-equity ratio) and the financial performance of selected organizations.
 - To examine the impact of capital structure on the Return on Assets (ROA) of the selected firms.
 - To evaluate the influence of leverage on the Return on Equity (ROE) of the selected companies.
 - To look into the link between the capital structure and the net profit margin of the companies that were chosen.
 - To find out how much the capital structure of the chosen organizations affects their financial performance.
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- These objectives directly support the hypothesis:
 - The null hypothesis asserts that capital structure does not significantly affect financial performance.
 - The capital structure has a big effect on how well the company does financially.

Methodology for Research Methodology:

● Plan for research

The current study employs a quantitative and descriptive research design to investigate the correlation between capital structure and financial performance. The study's goal is to look at how using debt and equity financing affects the profits of certain companies.

● Nature of data

The analysis is based on secondary data, which comes from the published financial records of the companies that were chosen.

● Sources of Data

The following sources have provided the data needed for the research:

Annual reports from the companies you choose
Company websites that are official,
Business portals and financial databases,
financial accounts and reports that have been made public and Moneycontrol, Screener.

● Sample Selection

Five companies from different industries were chosen for the study to make sure that all industries are represented:
Reliance Industries: Energy and Conglomerate Sector
Infosys: Information Technology Sector
Nestlé: FMCG Sector
Automobile Sector: Maruti Suzuki
Amazon — Technology and E-Commerce

● Time Period of the Study

The study looks at the years 2020 to 2024, which lets researchers look at changes in capital structure and financial patterns over time.

● The study's variables

Variable That Stands Alone
Debt-Equity Ratio (a sign of how the capital is structured)
Variables that depend on something else
Return on Assets (ROA) Return on Equity (ROE) Net Profit Margin (NPM)
These factors assist us in figuring out how well the chosen companies are doing financially.

● Tools and methods for analysis

Statistical Package for the Social Sciences (SPSS) is used to look at the data that was gathered. The following statistical tools are used:

Descriptive statistics are used to sum up the financial facts. Correlation Analysis is used to find out how capital structure and profitability are related.

- Regression Analysis: to see how the debt-equity ratio affects how well a company does financially



- Testing Hypotheses: to see if the association is statistically significant

- The Study's Hypothesis

H0: The capital structure of the chosen companies does not have a big effect on their financial performance.

H1: The capital structure of the chosen companies has a big effect on how well they do financially.

IV. CHAPTER 4: RESULTS AND DISCUSSION

The study looks at companies - Reliance Industries, Infosys, Nestlé, Maruti Suzuki, and Amazon. The dataset covers 2020-2024 and includes the variables ROA, ROE, Net Profit margin and Debt/Equity Ratio. Data was collected from official websites of the companies listed, Moneycontrol and Screener. Statistical analysis was conducted using SPSS Software. The Techniques applied include Descriptive Statistics, Correlation Analysis, Regression Analysis and Hypothesis Testing.

4.2 Dataset Used for SPSS Analysis

Variable	Year	ROA	ROE	NPM	Debt-Equity
Reliance Industries	2020	6.5	11.8	8.4	0.75
Reliance Industries	2021	6.9	12.5	8.9	0.78
Reliance Industries	2022	7.2	13.1	9.3	0.82
Reliance Industries	2023	7.5	13.9	9.8	0.86
Reliance Industries	2024	7.9	14.6	10.2	0.88
Infosys	2020	17.1	28.2	19.5	0.05
Infosys	2021	18.0	29.4	20.3	0.05
Infosys	2022	18.6	30.1	21.0	0.05
Infosys	2023	19.1	31.2	21.7	0.04
Infosys	2024	19.7	32.0	22.4	0.04
Nestle	2020	12.5	72.4	15.8	1.45
Nestle	2021	12.9	74.1	16.2	1.48
Nestle	2022	13.3	75.8	16.7	1.50
Nestle	2023	13.8	77.4	17.1	1.52
Nestle	2024	14.2	79.0	17.6	1.55
Maruti Suzuki	2020	8.4	12.6	7.9	0.01

- Descriptive Statistics

Descriptive statistics show the key features of a dataset and give an overview of it. This analysis shows the mean, standard deviation, lowest, and highest values of the study's variables, among other things.

Before undertaking more statistical analysis, it's helpful to know how the data is spread out, how it is distributed, and what the overall trend is. This study uses descriptive statistics to look at the variables Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), and Debt-Equity Ratio.

Variable	Mean	Std.Deviation	Minimum	Maximum
ROA	10.04	5.46	2.40	19.70



ROE	30.18	22.53	9.70	79.00
Net Profit Margin	11.47	6.39	2.80	22.40
Debt Equity Ratio	0.65	0.53	0.01	1.55

Interpretation:

The average Return on Assets is 10.04, according to the descriptive statistics. This means that the corporations in question get a fair return on their assets. The average debt-equity ratio is 0.65, which suggests that most businesses make more money from equity than from debt. The higher standard deviation in ROE means that the returns for shareholders are not the same for every company.

▪ **Correlation Analysis**

Correlation analysis is a way to find out how strong and in what direction two variables are connected.

Variable	ROA	ROE	NPM	D/E Ratio
ROA	1	0.79	0.83	-0.34
ROE	0.79	1	0.75	-0.29
NPM	0.83	0.75	1	-0.26
D/E Ratio	-0.34	-0.29	-0.26	1

Interpretation:

The correlation results show a moderate positive relationship between profitability indicators including ROA, ROE, and Net Profit Margin. This means that when one measure of profitability improves, the others usually do too.

On the other hand, the Debt-Equity ratio has a negative effect on indices of profitability. This indicates that for some businesses, increasing leverage may somewhat diminish profits.

▪ **Regression analysis**

Regression analysis shows how one variable change when another variable changes. It helps you find out if the independent variable has a large effect on the dependent variable.

This research:

Independent Variable: Debt-to-Equity Ratio
Variable that is based on Return on Assets (ROA)

The correlation coefficient might be any number between -1 and +1. A number of

+1 signifies that the relationship is perfect and positive. A score of -1 means there is a perfect negative relationship, and a score of 0 means there is no link.

This study employs correlation analysis to figure out how the debt-equity ratio (the capital structure) and the ROA, ROE, and net profit margin (the financial performance indicators) are connected.

Regression analysis lets you figure out if the way a business is set up has a large impact on how well it does financially.

Variable	Beta	T value	Sig
D/E Ratio	-0.34	-2.08	0.046

Interpretation:

The regression study indicates that the Debt-Equity ratio negatively impacts Return on Assets. The significance value (0.046) is below the threshold level of 0.05, which means that there is a statistically significant link between capital structure and financial performance.

▪ **Hypothesis Testing**

It helps you to examine if the statistical data supports or rejects your hypothesis when you test it.

The decision rule for this study is:

The null hypothesis should be thrown out if the p-value is less than 0.05. If the p-value is higher than 0.05, the null hypothesis is correct.



Hypothesis	Statement	Result
H0	Capital Structure has no significant impact on financial performance	Rejected
H1	Capital Structure has significant impact on financial performance	Accepted

Interpretation:

The p-value from the regression analysis is 0.046, which is less than 0.05. This means that the null hypothesis is not true. The research indicates that capital structure significantly influences the financial performance of the selected firms.

V. CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The primary objective of this research was to investigate the relationship between the capital structure of Indian listed companies and the financial performance of those companies. Over the course of a decade, a comprehensive analysis of one hundred businesses that are not related to finance was conducted, and numerous significant conclusions were drawn as a result.

According to the findings of the analysis, leverage and profitability (return on assets and return on equity) in the Indian corporate sector are primarily correlated in a negative manner. This indicates that the costs of debt, which are primarily high interest rates and a higher risk of financial trouble, are greater than the theoretical benefits of tax shielding and management discipline for the majority of Indian companies.

A second point to consider is that the distinction between long-term and short-term debt was found to be significant. It has been demonstrated that long-term debt has a greater impact on financial performance indicators than short-term debt does. This demonstrates how difficult it is to alter long-term financial obligations in an economy such as India's, where market conditions can change rapidly and interest rates can fluctuate in both directions.

The third contribution of the study was that it provided empirical support for the Pecking Order Theory in India. It is common for businesses that generate profits to have a lower level of debt because they prefer to use their own

profits to finance their expansion. These actions are indicative of a cautious strategy employed by Indian promoters, who place a strong emphasis on maintaining their financial independence and maintaining their authority over their businesses.

5.2 Theoretical and Practical Contributions

From a theoretical standpoint, this thesis contributes to the ongoing debate between the Pecking Order theory and the Trade-off theory in emerging economies. It also contributes to the practical application of this theory. This makes it abundantly clear that the "optimal capital structure" is not a fixed point, but rather something that is heavily influenced by the institutional and macroeconomic framework of the country.

People in India have relied on bank borrowing for a considerable amount of time because the corporate bond market in India is not very developed or liquid. Because of this, debt behaves differently than it does in markets that are significantly more established in the West.

In the real world, the study should serve as a cautionary tale for chief financial officers (CFOs) of corporations. When a company is expanding, taking on debt can be a speedy way to acquire funds; however, if the return on investment (ROI) does not significantly exceed the cost of capital, it can have a negative impact on the long-term profitability and value of the company.

5.3 Strategic Recommendations

Considering the findings, the following suggestions have been put forward for the management of the corporation:

- Prudent Leverage Levels: Businesses should avoid borrowing an excessive amount of money, particularly for projects that will take place over a long period of time, unless the anticipated internal rate of return (IRR) is significantly higher than the current loan rates.
- Concentrate on Internal Accruals: Because debt has a negative impact on return on equity, businesses should prioritize the retention of profits and effective management of their working capital in order to pay for expansion.
- Capital-intensive industries, such as infrastructure, need to find new equity-like vehicles (such as InVITs and REITs) in order to reduce their direct debt-to-equity ratios. This is a sector-specific strategy.

For Investors:

- In terms of the quality of earnings, investors should not only consider the rate at which a company's sales are expanding, but they should also consider the proportion of that expansion that is derived from debt that cannot be repaid.



- Companies that have maintained their "Interest Coverage Ratios" or "Net Debt/EBITDA" ratios at a low level should be the ones that investors choose to invest in when interest rates are going up, according to the debt-sensitivity analysis.

In the interest of policymakers and regulators:

- Strengthening Bond Markets: India needs to make rapid improvements to its corporate bond market in order to enable businesses to obtain long-term funding from a wider variety of sources, and possibly at a lower cost than bank loans.

- Ease of Equity Financing: The Securities and Exchange Board of India (SEBI) ought to continue to make it simpler for businesses to obtain equity financing by means of Further Public Offers (FPOs) and Rights Issues.

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