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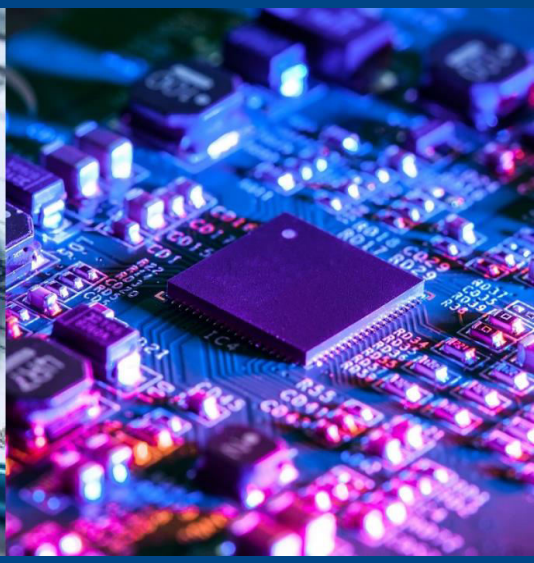

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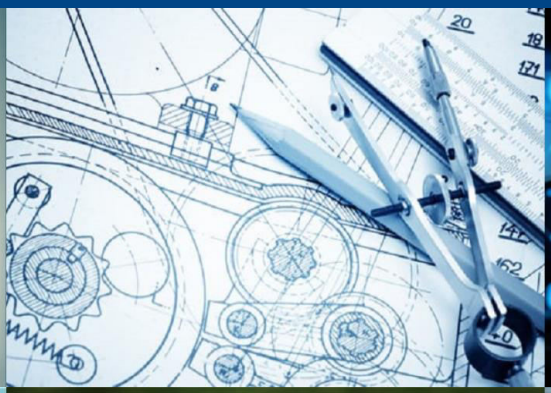

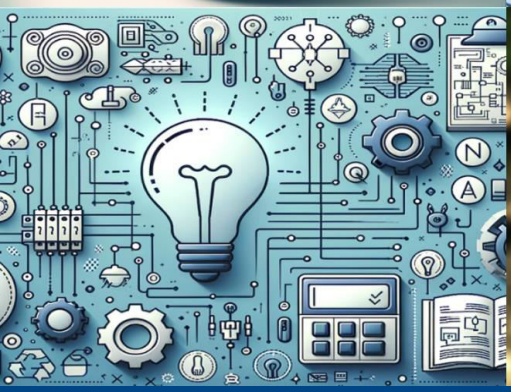

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A Study on Impact of Capital Structure on Firm Value in Indian Manufacturing Sector

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ABSTRACT: This study examines the impact of capital structure on firm value in the Indian manufacturing sector using panel data from six major listed companies over a ten-year period (2014–15 to 2023–24). The research adopts a quantitative approach using regression and correlation analysis to evaluate the relationship between leverage and firm value, measured through Tobin's Q.

The findings indicate that the Debt-to-Equity Ratio has a significant positive impact on firm value, suggesting that optimal use of debt enhances market valuation. Return on Assets (ROA) also shows a strong positive influence, highlighting profitability as a key determinant of firm value. In contrast, asset tangibility exhibits a significant negative relationship, while firm size and growth rate are found to be statistically insignificant.

The study concludes that while leverage contributes positively to firm value, its effectiveness depends on efficient utilization and balanced financial management. The results provide valuable insights for financial managers in optimizing capital structure decisions in the Indian manufacturing context.

Capital structure decisions are critical in determining a firm's financial stability and market valuation. While classical financial theories provide different perspectives on the role of leverage, empirical findings remain inconsistent, especially in emerging economies like India. This study focuses on understanding how capital structure influences firm value in the Indian manufacturing sector, which is capital-intensive and economically significant.

KEYWORDS: Capital Structure, Firm Value, Debt-to-Equity Ratio, Tobin's Q, Indian Manufacturing Sector, Leverage, Profitability

I. INTRODUCTION

Capital structure refers to the mix of debt and equity used by a firm to finance its operations and growth. It is a fundamental financial decision that directly influences a firm's cost of capital, risk profile, and overall market valuation. The primary objective of financial management is to maximize shareholder wealth, which is reflected in the firm's market value.

In emerging economies like India, capital structure decisions become more complex due to factors such as evolving financial systems, regulatory frameworks, and limited access to long-term capital. The manufacturing sector, being capital-intensive, heavily relies on financing decisions to sustain operations and expansion. Therefore, understanding how capital structure affects firm value is crucial.

This study focuses on selected Indian manufacturing firms to analyse the relationship between leverage and firm value using market-based measures.

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Research Objectives

1. To examine the impact of capital structure on firm value.
2. To analyse the relationship between leverage and market valuation.
3. To identify firm-specific factors influencing firm value.

II. FRAMING OF RESEARCH HYPOTHESES

Hypothesis 1:

- H0: Debt-to-Equity Ratio has no significant impact on firm value.
- H1: Debt-to-Equity Ratio has a significant impact on firm value.

Hypothesis 2:

- H0: Firm Size has no significant impact on firm value.
- H1: Firm Size has a significant impact on firm value.

Hypothesis 3:

- H0: Return on Assets has no significant impact on firm value.
- H1: Return on Assets has a significant impact on firm value.

Hypothesis 4:

- H0: Growth Rate has no significant impact on firm value.
- H1: Growth Rate has a significant impact on firm value.

Hypothesis 5:

- H0: Tangibility Ratio has no significant impact on firm value.
- H1: Tangibility Ratio has a significant impact on firm value.

III. REVIEW OF LITERATURE

The relationship between capital structure and firm value has been extensively studied in corporate finance, with both theoretical and empirical perspectives offering diverse insights.

The foundational work by Modigliani and Miller (1958) introduced the capital structure irrelevance proposition, arguing that under perfect market conditions, a firm's value is independent of its financing decisions. However, their later extension (1963) incorporated corporate taxes and demonstrated that debt financing can enhance firm value through tax shields, thereby establishing the relevance of leverage in real-world conditions.

Building on this, Myers (1984) proposed the pecking order theory, which suggests that firms prioritize internal financing over external sources due to information asymmetry. According to this theory, firms prefer retained earnings first, followed by debt, and consider equity as a last resort. This behaviour reflects the costs associated with asymmetric information and signalling effects in financial markets.

Jensen and Meckling (1976) introduced the agency cost theory, emphasizing the conflicts of interest between managers, shareholders, and debt holders. The study argues that debt can act as a disciplinary mechanism by reducing free cash flow available to managers, thereby enhancing firm value. However, excessive debt may lead to conflicts between shareholders and creditors, increasing agency costs.

Empirical evidence from developed markets provides mixed results. Rajan and Zingales (1995) identified key determinants of capital structure, including firm size, asset tangibility, and profitability, highlighting the role of institutional factors in shaping financing decisions. Similarly, Fama and French (2002) found that profitability is negatively related to leverage, supporting the pecking order theory, while offering limited support for the trade-off theory.

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Studies in emerging markets further complicate the relationship. Abor (2005), in the context of Ghana, found that short-term debt positively influences profitability, whereas long-term debt has a negative impact. Zeitun and Tian (2007) reported that higher leverage negatively affects firm performance in Jordan, suggesting that financial distress costs may outweigh the benefits of debt in developing economies. Salim and Yadav (2012) also observed a negative relationship between leverage and firm value in Malaysia using Tobin's Q as a measure.

In the Indian context, several studies provide important insights. Chowdhury and Chowdhury (2010) found that an optimal mix of debt and equity enhances firm value, supporting the trade-off theory. Khan and Qayyum (2012) reported a positive relationship between moderate leverage and firm performance, indicating that strategic use of debt can improve shareholder wealth. Gupta and Sharma (2014) highlighted that balanced capital structures lead to higher market valuation, while excessive or insufficient leverage negatively affects firm growth.

Further studies by Reddy and Agarwal (2015) and Singh and Singh (2016) reinforced the importance of maintaining optimal leverage levels, showing that moderate debt improves firm value, whereas excessive debt increases financial risk. Verma and Kumar (2017) and Mehta and Jain (2017) also found that firms with balanced debt-equity ratios achieve higher market valuation, supporting the trade-off perspective.

Recent studies have explored more nuanced relationships. Choudhury and Basu (2018) identified a non-linear relationship between leverage and firm value, suggesting that while moderate debt enhances value, excessive leverage leads to financial distress. Ramesh and Mohan (2019) emphasized the role of external factors such as interest rates and macroeconomic conditions in influencing capital structure decisions and firm valuation.

Identification of Research Gaps

Despite extensive literature, several gaps remain. Many studies focus on mixed industry samples, limiting sector-specific insights, particularly for capital-intensive manufacturing firms. Additionally, a large proportion of Indian studies rely on accounting-based measures such as Return on Assets and Return on Equity, which do not fully capture market perceptions. The use of market-based indicators like Tobin's Q remains limited. Furthermore, there is a lack of recent panel data analysis reflecting contemporary financial conditions in India.

IV. RESEARCH METHODOLOGY

- Approach: Quantitative and explanatory research design.
- Data Collection: Secondary data collected from Bloomberg database.
- Sample: Six listed manufacturing firms – Grasim Industries, Hindalco Industries, Tata Steel, Bajaj Auto, Maruti Suzuki India, and Tata Motors.
- Time Period: 2014–15 to 2023–24 (10 years).
- Variables:
  - Independent: Debt-to-Equity Ratio
  - Dependent: Firm Value (Tobin's Q)
- Control Variables: Firm Size, ROA, Growth Rate, Tangibility
- Analysis Tools: Descriptive statistics, Pearson correlation, and multiple regression analysis using SPSS.

V. DATA ANALYSIS AND HYPOTHESIS TESTING

A. Descriptive Overview

The descriptive statistics provide an overview of the key variables used in the study. The average Tobin's Q is 2.16, indicating that firms are valued above their book value, reflecting positive market perception and growth expectations. The Debt-to-Equity Ratio averages 0.75, suggesting a moderate reliance on debt financing among the selected firms. Profitability, measured using Return on Assets (ROA), shows moderate variation across firms, indicating differences in operational efficiency. The growth rate exhibits noticeable fluctuations, reflecting varying expansion patterns and market conditions within the manufacturing sector.

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B. Correlation Analysis

Correlation analysis is used to examine the strength and direction of the relationship between variables.

- Debt-to-Equity Ratio shows a weak negative correlation with firm value, indicating that higher leverage may slightly reduce market valuation.
- ROA has a strong positive correlation with Tobin's Q, suggesting that more profitable firms tend to have higher market value.
- Tangibility shows a strong negative relationship with firm value, implying that firms with higher fixed assets may experience lower valuation due to reduced flexibility.

C. Regression Results

Multiple regression analysis is conducted to assess the impact of capital structure and firm-specific variables on firm value.

Variable	Coefficient	p-value	Result
Debt-to-Equity	0.776	0.004	Significant (+)
ROA	9.739	0.000	Significant (+)
Tangibility	-4.770	0.000	Significant (-)
Firm Size	Insignificant	>0.05	Not Significant
Growth Rate	Insignificant	>0.05	Not Significant

Interpretation

The regression results indicate that leverage (Debt-to-Equity Ratio) and profitability (ROA) have a statistically significant positive impact on firm value, supporting the trade-off theory of capital structure. This suggests that firms benefit from optimal use of debt and efficient operations.

On the other hand, tangibility shows a significant negative effect, indicating that asset-heavy firms may face lower market valuation due to limited growth flexibility. Firm size and growth rate are found to be statistically insignificant, implying that they do not play a major role in determining firm value in this context.

VI. FINDINGS AND RECOMMENDATIONS

Findings:

- Capital structure significantly influences firm value.
- Moderate leverage enhances market valuation.
- Profitability is the strongest determinant of firm value.
- High tangibility negatively affects valuation.

Recommendations:

- Firms should maintain an optimal balance between debt and equity.
- Focus on improving profitability to enhance valuation.
- Avoid excessive investment in fixed assets without growth potential.
- Financial managers should adopt strategic leverage policies.

VII. CONCLUSION

The study concludes that capital structure plays a significant role in determining firm value in the Indian manufacturing sector. The positive impact of leverage supports the trade-off theory, indicating that debt can enhance value when used efficiently. However, profitability remains the most critical factor influencing valuation.

Overall, firms should adopt a balanced financial strategy that integrates optimal leverage with strong operational performance to maximize shareholder wealth.

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