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COST OF CAPITAL ESTIMATION IN MANUFACTURING FIRMS AT BHARAT FORGE

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ABSTRACT: The cost of capital is a critical financial metric that significantly impacts a business's investment decisions, capital budgeting, and overall financial strategy. The optimal financing decisions and the enhancement of shareholder value in manufacturing organizations, which frequently incur substantial expenditures in apparatus, technology, and operations, are facilitated by the accurate estimation of the cost of capital. This research assesses the debt-to-equity funding ratio of Bharat Forge, a prominent Indian manufacturer in the automotive and industrial sectors. The paper investigates the methods for calculating the weighted average cost of capital (WACC), the cost of debt, and the cost of equity while considering market conditions, risk factors, and industry norms. The research investigates Bharat Forge's financial statements and market data to illustrate the business's ability to maintain growth over time, balance risk and return, and identify the most effective methods of funding itself. The results underscore the importance of accurate cost of capital estimation in the strategic financial planning of manufacturing companies.

Index terms: *Cost of Capital, Weighted Average Cost of Capital (WACC), Cost of Equity, Cost of Debt, Capital Structure, Financial Strategy, Capital Budgeting,*

1. INTRODUCTION

The cost of capital is the lowest rate of return that an investment must achieve in order to justify the additional risk from a risk-reward perspective. This rate is also referred to as the hurdle rate.

The cost of capital is the minimum rate of return that a business must achieve in order to generate a profit. In order to achieve profitability, a business must generate sufficient revenue to offset the cost of its capital expenditures. This encompasses the expense of the debt and equity that a business utilizes to finance its operations. The cost of capital of a company is significantly influenced by its capital structure, or the form of financing it employs. A company may utilize either debt or equity exclusively, or both.

The cost of capital is of paramount importance to a corporation, as it dictates the amount of money that can be borrowed. Adequate funding and a low cost of capital are the objectives of businesses as they strive to identify the optimal finance combination.

The cost of capital is the minimum return that a business must generate on its investment initiatives to satisfy its investors and preserve its market value. It is essential for manufacturing organizations to estimate the cost of capital, as it has a direct impact on their financial strategy, project assessments, and investment decisions. The business is able to maintain long-term growth, balance debt and equity financing, and make prudent use of its resources by accurately estimating. Manufacturing companies

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encounter substantial challenges in determining the optimal funding combination due to their dependence on technology, machines, and working capital, as well as their substantial capital. Consequently, the cost of capital is an essential metric in strategic planning.

In order to determine the cost of capital, it is necessary to evaluate the weighted average cost of a variety of financing options, including debt, equity, and retained earnings. This computation is frequently influenced by the changing interest rates, investor expectations, and business-specific hazards that manufacturing firms must contend with. Businesses may mitigate their financial risks and make informed decisions regarding technological advancements, expansions, and new initiatives by accurately calculating the cost of capital. Furthermore, it functions as a metric for evaluating a company's profitability, aiding management in decision-making, and increasing shareholder value in a competitive industrial environment.

2. LITERATURE SURVEY

Ogunade, O. A. (2025). This investigation investigates the financial performance of Nigerian industrial enterprises that are listed on the stock exchange in relation to their capital structure. The investigation examines the impact of a variety of debt ratios on profitability metrics, including Return on Equity (ROE) and Return on Assets (ROA). The results indicate that long-term debt ratios have a negative impact on financial performance, while short-term debt ratios have a positive impact. The paper posits that an optimal capital structure is necessary to improve the performance of a firm.

Hail, L. (2024). The author of this paper confronts the challenge of calculating the cost of capital, which is not immediately quantifiable due to the fact that businesses own a portion of their capital stock. The research elucidates the user cost of capital by examining the variations in the input choices made by businesses. The research demonstrates that tangible capital expenses as a percentage of output have remained constant, despite the fact that economic profits have increased from approximately 4% to 8% of sales over the past 50 years, as evidenced by Compustat data for the United States. Furthermore, the analysis indicates that intangible capital expenses have been increasing in tandem.

Mensah, L. (2025). This investigation investigates the impact of capital structure on business expansion in organizations that have implemented International Financial Reporting Standards (IFRS). The trade-off theory is employed to investigate the equilibrium between the advantages of debt and the disadvantages of the financial crisis. The research employs a two-step Generalized Method of Moments (GMM) framework and a sample of 92 non-financial enterprises that were listed on the Frankfurt Stock Exchange between 1994 and 2021. The results indicate that capital structure decisions are essential for business expansion, particularly in light of the implementation of IFRS, which improves financial transparency and comparability.

Ameer, R. (2025): In order to examine the factors that influence the capital structure of Indonesian manufacturing enterprises, this research employs a dynamic model with system-generalized method of moments (Sys-GMM) estimation. The research examines data from 159 publicly

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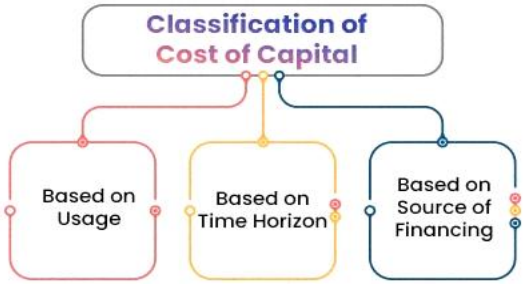
traded manufacturing companies, with a particular emphasis on firm-specific factors such as leverage, profitability, sales, equity, and non-debt tax exemptions. The results indicate that these variables significantly impact capital structure decisions and that businesses adjust their capital structures over time to accomplish their desired ratios. The research elucidates the variables that influence decision-making in the Indonesian manufacturing industry, as well as the adaptability of capital structure. It contributes to the corpus of knowledge by analyzing the evolution of capital structure over time using advanced econometric techniques.

3. CLASSIFICATION OF COST OF CAPITAL



The cost of capital can be classified in a variety of ways, such as by usage and classification. The following are a few examples of typical groups:

Based on Usage:

The explicit cost of capital is the amount of money that a business must pay upfront and that is clearly quantifiable in order to secure funding from its investors. This category encompasses direct payments, such as interest on loans and dividends on securities. These apparent financial outflows serve as evidence of the compensation investors receive for their capital inputs.

The implicit cost of capital is used to evaluate the prospective cost of a company's capital use. It demonstrates the potential loss of return that may result when a business opts for a specific capital investment over the optimal alternative. Implicit costs are distinct from explicit costs in that they do not involve the exchange of money. Rather, they suggest that the organization is overlooking the potential profits associated with its most profitable investment opportunity.

Based on Time Horizon:

The historical cost of capital is a research of the circumstances and expenses that were associated with the acquisition of capital in the past. It investigates the impact of economic conditions and financing decisions on capital costs by analyzing historical data, including interest rates and financial metrics.

The future cost of capital is an estimate of the quantity of money that a company anticipates spending to secure funding for upcoming initiatives. The corporation must predict the amount of capital it will need in the future by analyzing factors such as interest rates, market conditions, and the company's risk profile.

Based on Source of Financing:

The term "specific cost of capital" refers to expenses that are directly associated with a specific product, department, or project, are closely related to a specific business activity, and are readily apparent. This enables a comprehension of the financial impact they have on the company.

A company's total cost of capital is influenced by both fixed and variable costs. Fixed costs are stable because they remain constant regardless of output levels. In contrast, variable costs do fluctuate in response to fluctuations in output. Businesses must be cognizant of

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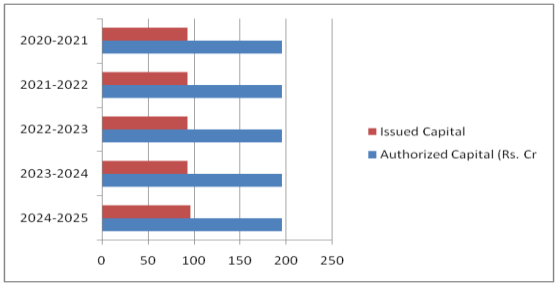
this in order to optimize their resources and reduce expenses.

4. RESULTS AND INTERPRETATION

Capital Structure of Bharat Forge

Period	Instrument	Authorized Capital (Rs. Cr	Issued Capital	Shares (nos)	Face Value	Capital
2024-2025	Equity Share	195	95.65	47,80,88,632	2	95.62
2023-2024	Equity Share	195	93.15	46,55,88,632	2	93.12
2022-2023	Equity Share	195	93.15	46,55,88,632	2	93.12
2021-2022	Equity Share	195	93.15	46,55,88,632	2	93.12
2020-2021	Equity Share	195	93.15	46,55,88,632	2	93.12



INTERPRETATION: The authorized capital of Bharat Forge has remained constant at ₹195 crore for the past five years, as illustrated by the graph. However, the issued capital has steadily increased from ₹93.15 crore in 2020–2021 to ₹95.65 crore in 2024–2025. Despite the fact that the nominal value of each share remained at ₹2, the number of equity shares increased from 46.56 crore to 47.81 crore.. This suggests that the issuance of stock has increased slightly, suggesting that firms are raising additional funds to support their expansion.

PROFIT & LOSS ACCOUNT OF BHARAT FORGE

Profit & Loss	2025-2024	2024-2023	2023-2022	2022-2021	2021-2020
Income					
Sales Turnover	8,843.73	8,968.63	7,572.71	6,254.61	3,651.51
Net Sales	8,843.73	8,968.63	7,572.71	6,254.61	3,651.51
Other Income	-7.68	136.64	114.91	212.67	135.79
Stock Adjustments	-1.04	50.97	67.31	94.67	81.42
Total Income	8,835.01	9,156.24	7,754.93	6,561.95	3,868.72
Expenditure					
Raw Materials	4,080.15	4,414.54	3,815.81	3,052.39	1,772.00
Power & Fuel Cost	475.93	450.24	352.39	347.92	265.12
Employee Cost	636.61	601.45	543.01	505.79	448.24
Miscellaneous Expenses	1,146.60	1,075.60	1,017.71	727.46	519.95
Total Expenses	6,339.29	6,541.83	5,728.92	4,633.56	3,005.31

5. CONCLUSION

In Conclusion, the cost of capital is an essential element of financial management for manufacturing firms, as it has a direct impact on the overall success of the business, capital budgeting, and investment decisions. This research underscores the necessity of considering firm-specific and market-related risk factors, as well as the necessity of employing rigorous methodologies such as CAPM, WACC, and ICC.

The research offers an exhaustive comprehension of the variables that influence and fluctuate the cost of capital in a variety of industrial sectors by integrating primary data from financial managers with secondary data from business reports, stock markets, and industry evaluations. The conclusions are nevertheless beneficial in enhancing capital structure and financing decisions, despite a variety of challenges, including inadequate data.

Regular monitoring, sensitivity analysis, and comparison with industry benchmarks can also enhance the accuracy of cost predictions, thereby enabling businesses to align their financial strategies with long-term growth objectives. This research demonstrates that the manufacturing sector's long-term competitiveness, risk management, and strategic planning are all enhanced by the use of a comprehensive, data-driven method to calculate the cost of capital.

REFERENCES

1. Porras, Eva R. The Cost of Capital. Palgrave Macmillan UK, 2011.
2. Pratt, Shannon P., and Roger J. Grabowski, eds. Cost of Capital in

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Litigation. John Wiley & Sons, Inc., 2012.
3. Schlegel, Dennis. Cost-of-Capital in Managerial Finance. Springer International Publishing, 2015.
4. De Luca, Pasquale. "Cost of Capital." In Springer Texts in Business and Economics. Springer International Publishing, 2022.