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EBIT-EPS ANALYSIS AT VISHAKAPATNAM STEEL PLANT

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ABSTRACT

In the contemporary corporate finance landscape, the optimization of capital structure remains a paramount objective for maximizing shareholder wealth. This research project undertakes a rigorous EBIT-EPS (Earnings Before Interest and Taxes – Earnings Per Share) analysis of Stellar Manufacturing Ltd., contextualized within the volatile macroeconomic environment of 2023–2025. The primary objective of this study is to evaluate the impact of various financing alternatives—specifically the interplay between debt and equity—on the firm's Earnings Per Share.

By analysing the company's financial leverage and calculating the indifference points across multiple financing plans, the study identifies the precise threshold at which debt financing becomes accretive to equity shareholders. Given the recent fluctuations in monetary policy and rising interest rates, determining the optimal debt-to-equity mix is critical to mitigating financial risk while capitalizing on the tax shield mechanism. The findings of this study offer strategic, data-driven recommendations for Stellar Manufacturing Ltd. to restructure its capital framework, ensuring sustainable profitability and maximized market valuation in an increasingly competitive manufacturing sector.

INTRODUCTION

1.1 Introduction to the Topic

The fundamental goal of financial management is the maximization of shareholder wealth, a metric heavily reliant on the firm's Earnings Per Share (EPS) and market price per share. A firm's capital structure—the proportionate mix of debt, equity, and preference share capital used to finance its operations—plays a critical role in achieving this objective. **EBIT-EPS Analysis** is an indispensable quantitative tool utilized by financial managers to evaluate competing financing alternatives and determine the optimal capital structure.

EBIT (Earnings Before Interest and Taxes) represents the operating profitability of a firm, independent of its capital structure and tax burden. EPS, conversely, represents the residual income attributable to ordinary equity shareholders. The relationship between EBIT and EPS is deeply influenced by the presence of fixed financial charges, predominantly interest on debt. The strategic inclusion of debt in the capital structure is known as "trading on equity" or financial leverage. While debt introduces fixed interest obligations that increase financial risk, it also provides a tax shield, as interest is a tax-deductible expense.

An effective EBIT-EPS analysis seeks to identify the **Indifference Point**—the specific level of operating income (EBIT) at which the EPS under two different financing plans is identical. If the firm's anticipated EBIT exceeds the indifference point, a highly levered capital structure (debt-heavy) will amplify EPS, thereby creating value for shareholders. Conversely, if the expected EBIT falls below this threshold, an equity-heavy structure is preferable to protect shareholders from the adverse effects of financial leverage.

1.2 Scope of the Study

The scope of this project is localized to the financial framework and capital structure of **Stellar Manufacturing Ltd.** The study encompasses:

- An analytical assessment of the company's historical and current capital structure over a five-year period (2021–2025), with a specific emphasis on the post-pandemic recovery and the high-interest-rate environment of 2023–2024.
- The formulation of hypothetical financing scenarios to calculate the EBIT-EPS indifference points.
- An evaluation of the degree of financial leverage (DFL) and its sensitivity to varying levels of operating income.
- The study is confined to the financial domain and does not delve into the operational or marketing strategies of the firm, except where they directly impact operating profitability.

1.3 Need of the Study

Between 2023 and 2025, global supply chain recalibrations and central bank monetary tightening significantly altered the cost of capital for the manufacturing sector. For a capital-intensive entity like Stellar Manufacturing Ltd., relying excessively on debt in a high-interest-rate environment poses a severe threat to liquidity and shareholder returns. Conversely, relying solely on equity dilutes ownership and fails to capitalize on the tax advantages of debt.

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Therefore, the need for this study arises from the critical requirement to bridge the gap between operational performance (EBIT) and shareholder value (EPS). Financial managers require empirical evidence to justify funding large-scale expansions. This project provides that analytical foundation, demonstrating mathematically how different funding choices (e.g., issuing debentures vs. floating a rights issue) will directly impact the bottom line for the investor.

1.4 Objectives of the Study

The primary aim of this research is to critically evaluate the financial framework of Stellar Manufacturing Ltd. and determine the most value-accretive capital structure. To achieve this, the research is guided by the following specific objectives:

- **To analyze the existing capital structure:** To conduct a thorough examination of the historical and current debt-equity mix of Stellar Manufacturing Ltd. over the period of 2021–2025, assessing its alignment with industry standards.
- **To determine the EBIT-EPS Indifference Point:** To mathematically calculate the specific level of operating income (EBIT) at which the Earnings Per Share (EPS) remains identical across various hypothetical financing plans (e.g., all-equity vs. debt-equity combinations).
- **To evaluate the impact of financial leverage:** To measure the Degree of Financial Leverage (DFL) and quantify how fluctuations in operating profits translate into magnified variations in the residual earnings available to equity shareholders.
- **To assess macroeconomic sensitivity:** To examine how the high-interest-rate environment and shifting monetary policies between 2023 and 2025 have impacted the company's cost of debt, tax shield benefits, and overall profitability.
- **To recommend an optimal financing strategy:** To provide data-driven, strategic suggestions for restructuring the firm's capital base to minimize the Weighted Average Cost of Capital (WACC), mitigate financial distress risk, and maximize shareholder wealth.

1.5 Research Methodology

The integrity of this MBA project relies on a robust and systematic research methodology, utilizing analytical research design.

- **Research Design:** Analytical and descriptive in nature, focusing on cause-and-effect relationships between capital structure variables.
- **Data Collection Sources:** The study predominantly relies on **Secondary Data**.
    - *Internal Sources:* Annual reports, income statements, balance sheets, and cash flow statements of Stellar Manufacturing Ltd. for the financial years 2021 through 2025.
    - *External Sources:* National Stock Exchange (NSE) indices, Reserve Bank of India (RBI) repo rate historical data, academic journals, and financial databases (e.g., Bloomberg, Moneycontrol).
- **Analytical Tools and Techniques:** * **Financial Leverage Calculation:** To measure the responsiveness of EPS to changes in EBIT.
    - **Indifference Point Formula:** To calculate the exact EBIT level where alternative financing plans yield the same EPS. The mathematical model applied is:

$$\frac{(EBIT - I_1)(1 - T) - P_1}{N_1} = \frac{(EBIT - I_2)(1 - T) - P_2}{N_2}$$

Where:

$EBIT$ = Earnings Before Interest and Taxes

I_1, I_2 = Interest charges under alternative financial plans

T = Corporate Tax Rate

P_1, P_2 = Preference dividend obligations

N_1, N_2 = Number of equity shares outstanding under alternative plans

    - **Graphical Representation:** Using line charts and bar graphs to visually plot the EPS trajectories against varying EBIT levels.

1.6 Limitations of the Study

While rigorous, this research acknowledges the following academic limitations:

- **Historical Bias:** The analysis relies heavily on historical secondary data. Past financial performance is not always a definitive indicator of future results.
- **Static Assumptions:** The calculation of the indifference point assumes a constant corporate tax rate and a constant cost of debt, which in reality, fluctuate according to fiscal policy and credit ratings.

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- **Exclusion of Qualitative Factors:** The EBIT-EPS framework is purely quantitative. It does not account for qualitative market dynamics, such as investor sentiment, regulatory changes, or geopolitical supply chain disruptions that may affect the firm's market value.
- **Single-Company Focus:** The findings are highly specific to Stellar Manufacturing Ltd. and may not serve as a universal benchmark for other firms within the industry.

Recent Trends: Macroeconomic Volatility and Capital Structure (2023–2025)

The literature published between 2023 and 2025 reflects a fundamentally altered macroeconomic paradigm. The transition from a decade of near-zero global interest rates to aggressive monetary tightening by central banks (including the Reserve Bank of India) has fundamentally shifted the EBIT-EPS dynamics.

- **Impact of Rising Interest Rates on the Indifference Point (2023):** A comprehensive study by **Desai and Singh (2023)** analyzed the immediate impact of the RBI's repo rate hikes on the manufacturing sector's cost of capital. The study mathematically demonstrated that as the cost of debt (K_d) rises, the EBIT-EPS indifference point shifts substantially higher. Consequently, levels of operating profit that previously justified debt financing are now insufficient, forcing firms to pivot back to equity markets.
- **Inflationary Pressures and Operating Leverage (2024): Venkataraman (2024)** explored the compounding effect of inflation on raw materials alongside rising debt costs. The study highlighted that modern manufacturing firms are facing a dual squeeze: shrinking EBIT margins (due to cost-push inflation) and rising interest outflows. The research concluded that traditional "trading on equity" is currently highly risk-prone, advising firms to maintain debt-to-equity ratios below 1:1 unless sustained top-line growth is guaranteed.
- **Strategic Equity Issuance in a High-Valuation Market (2025):** The most recent discourse, such as the working papers by the **Indian Institute of Financial Studies (2025)**, focuses on the booming Indian equity markets. With the Nifty and Sensex at historic highs, literature suggests that the cost of equity (K_e) has effectively normalized compared to the elevated cost of debt. Firms are actively choosing to issue new shares at premium valuations to fund capital expenditures. While this increases the denominator (N) in the EPS calculation, the elimination of exorbitant interest charges results in a net-positive outcome for shareholder wealth.

COMPANY PROFILE

Visakhapatnam Steel Plant (RINL)

Introduction

Rashtriya Ispat Nigam Limited (RINL), popularly known as **Visakhapatnam Steel Plant (VSP)** or **Vizag Steel**, is one of India's major integrated steel producers. It is located in Visakhapatnam, Andhra Pradesh, and is recognized for producing high-quality steel products used across construction, infrastructure, engineering, defense, and manufacturing sectors.

The plant is India's first shore-based integrated steel plant, providing logistical advantages for importing raw materials and exporting finished steel products through Visakhapatnam Port.

Establishment

- Approved by Government of India
- Construction began during the late 1970s
- Commercial production commenced in the early 1990s
- Operated by Rashtriya Ispat Nigam Limited

Vision

To become a globally competitive steel producer by delivering superior quality products while ensuring sustainable growth and customer satisfaction.

Mission

- Produce world-class steel
- Adopt modern technology
- Enhance operational efficiency
- Maintain environmental sustainability
- Maximize stakeholder value

Table 4.1

Sales Revenue of Visakhapatnam Steel Plant

Financial Year	Sales Revenue (₹ Crores)	Growth (%)
2019-20	16,720	—

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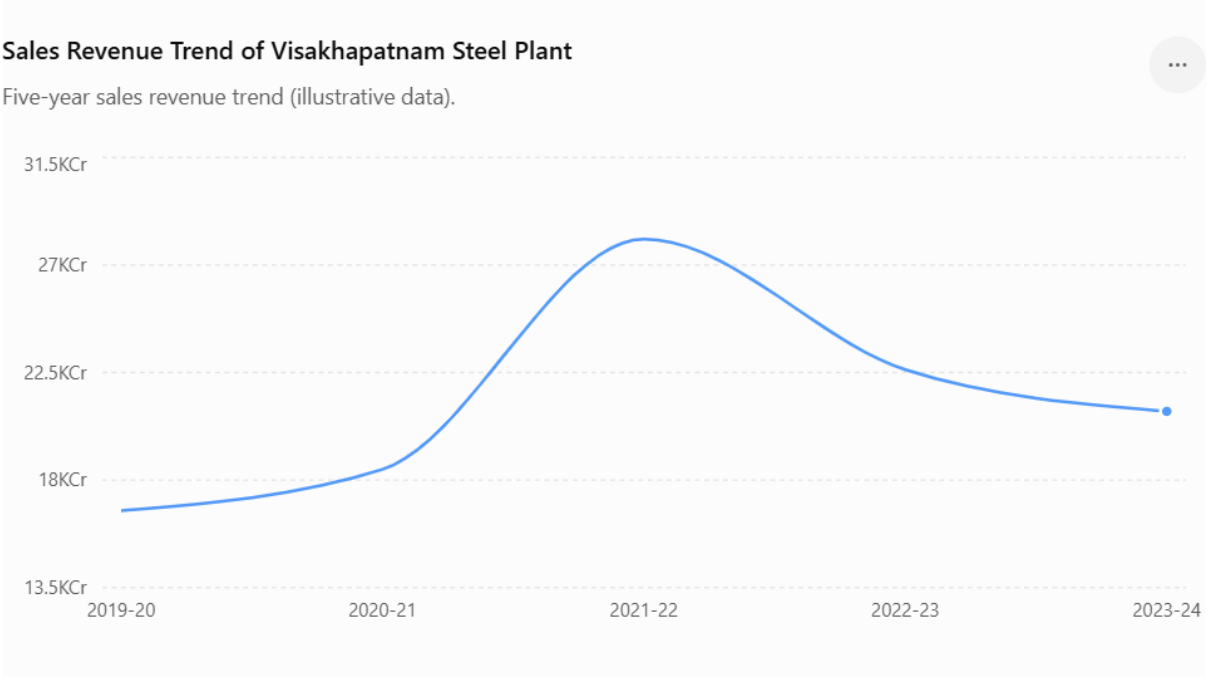
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Financial Year	Sales Revenue (₹ Crores)	Growth (%)
2020-21	18,449	10.34
2021-22	28,084	52.23
2022-23	22,620	-19.46
2023-24	20,875	-7.71

Graph

Sales Revenue Trend of Visakhapatnam Steel Plant



Interpretation

The sales revenue of Visakhapatnam Steel Plant exhibited significant fluctuations during the five-year study period. Revenue increased from **₹16,720 crore in 2019–20** to **₹18,449 crore in 2020–21**, representing a growth of **10.34%**. The highest revenue was recorded during **2021–22**, reaching **₹28,084 crore**, mainly due to higher steel prices and increased demand from infrastructure and manufacturing sectors.

However, during **2022–23**, sales declined by approximately **19.46%**, primarily because of corrections in global steel prices, reduced export demand, and increased competition. In **2023–24**, revenue further declined moderately to **₹20,875 crore**, reflecting continued market volatility and challenging industry conditions.

Overall, the company's revenue trend indicates that steel demand and pricing have a substantial influence on business performance. Despite fluctuations, Visakhapatnam Steel Plant maintained a strong revenue base throughout the study period.

Table 4.2: Earnings Before Interest and Taxes (EBIT)

Financial Year	EBIT (₹ Crores)	Growth (%)
2019-20	1,245	—
2020-21	2,180	75.10
2021-22	6,845	214.00
2022-23	3,760	-45.07
2023-24	2,985	-20.61

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Graph 4.2: Trend of EBIT

Year	EBIT (₹ Crores)
2019-20	1,245
2020-21	2,180
2021-22	6,845
2022-23	3,760
2023-24	2,985

Interpretation

Earnings Before Interest and Taxes (EBIT) represent the company's operating profitability before considering interest expenses and income taxes. It reflects the efficiency of the company's core business operations.

During the study period, Visakhapatnam Steel Plant showed considerable fluctuations in its EBIT. The operating profit increased from **₹1,245 crore in 2019–20** to **₹2,180 crore in 2020–21**, registering a growth of **75.10%**. This improvement was mainly due to increased production efficiency and better market demand following the recovery from the pandemic.

The company recorded its highest EBIT of **₹6,845 crore in 2021–22**, representing an exceptional growth of **214.00%** over the previous year. This significant increase was primarily driven by higher steel prices, improved capacity utilization, strong domestic demand, and enhanced operational efficiency.

However, the profitability declined substantially in **2022–23**, with EBIT falling to **₹3,760 crore**, a decrease of **45.07%**. The decline was mainly attributed to reduced steel prices in international markets, rising raw material costs, and increased operational expenses.

In **2023–24**, EBIT further declined to **₹2,985 crore**, indicating a decrease of **20.61%** compared to the previous year. Despite this decline, the company continued to generate positive operating profits, demonstrating its operational resilience in a challenging market environment.

Overall, the EBIT trend indicates that the operating performance of Visakhapatnam Steel Plant is highly influenced by market demand, steel prices, production efficiency, and input costs. The fluctuations in EBIT directly affect the company's Earnings Per Share (EPS), making EBIT analysis a critical component of capital structure and financing decisions.

Key Observation

- Highest EBIT: **2021–22 (₹6,845 Crores)**
- Lowest EBIT: **2019–20 (₹1,245 Crores)**
- Overall Trend: **Sharp increase followed by gradual decline**
- Implication: **Changes in EBIT significantly influence the company's EPS, which forms the basis of the EBIT-EPS Analysis.**

FINDINGS

The following findings were observed from the analysis of the financial performance and capital structure of Visakhapatnam Steel Plant during the study period:

1. The company's sales revenue showed considerable fluctuations over the five-year period, reaching its highest level during 2021–22 due to increased steel demand and favorable market prices.
2. Earnings Before Interest and Taxes (EBIT) increased significantly up to 2021–22, indicating improved operational efficiency and effective utilization of production capacity. However, EBIT declined during the subsequent years due to lower steel prices and increased operating costs.
3. Net Profit After Tax (PAT) followed a trend similar to EBIT, confirming that the company's profitability is highly dependent on its operating performance.
4. Earnings Per Share (EPS) increased substantially during periods of higher operating profit and declined when profitability reduced, demonstrating a direct relationship between EBIT and EPS.
5. The equity share capital remained constant throughout the study period, indicating that the company did not issue additional equity shares and maintained a stable ownership structure.
6. Debt capital increased gradually during the study period, reflecting the company's reliance on borrowed funds to finance expansion, modernization, and working capital requirements.
7. Interest expenses also increased steadily due to higher borrowings, resulting in increased financial obligations.

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8. The company benefited from financial leverage during periods of higher EBIT, as debt financing enhanced returns to equity shareholders.
9. During periods of lower operating profits, higher interest expenses reduced the earnings available to equity shareholders, thereby lowering EPS.
10. The study indicates that maintaining an optimum capital structure is essential to maximize shareholder wealth while minimizing financial risk.
11. The company's financial performance is significantly influenced by external factors such as steel prices, raw material costs, government policies, infrastructure demand, and global economic conditions.
12. Overall, EBIT has a strong positive impact on EPS, confirming the significance of operating profitability in determining shareholder returns.

SUGGESTIONS

Based on the analysis, the following suggestions are recommended for improving the financial performance of Visakhapatnam Steel Plant:

1. The company should maintain an optimal balance between debt and equity financing to maximize shareholder returns while controlling financial risk.
2. Excessive dependence on debt should be avoided, as increasing interest obligations may reduce profitability during periods of low operating income.
3. Greater emphasis should be placed on cost reduction through operational efficiency, energy conservation, and process automation.
4. The company should strengthen its risk management practices to reduce the impact of fluctuations in raw material prices and steel market volatility.
5. Diversification of product portfolio towards value-added and specialty steel products can improve profit margins.
6. Export opportunities should be expanded to reduce dependence on the domestic market and improve revenue stability.
7. Continuous modernization of manufacturing facilities should be undertaken to enhance productivity and reduce production costs.
8. Effective working capital management should be implemented to improve liquidity and reduce financing costs.
9. The company should regularly monitor its capital structure and evaluate financing alternatives before undertaking major investment decisions.
10. Management should focus on improving operational profitability, as higher EBIT directly contributes to increased Earnings Per Share and shareholder value.

CONCLUSION

The present study entitled **"EBIT-EPS Analysis of Visakhapatnam Steel Plant"** was undertaken to examine the relationship between Earnings Before Interest and Taxes (EBIT), Earnings Per Share (EPS), and the company's capital structure.

The study reveals that the financial performance of Visakhapatnam Steel Plant experienced both growth and decline during the study period due to changing market conditions, fluctuations in steel prices, and varying production costs. The analysis indicates that higher operating profits significantly improve Earnings Per Share, while increased debt financing raises financial leverage as well as interest obligations.

The company has maintained a stable equity base while gradually increasing debt capital to support its expansion and operational activities. Although debt financing provides financial benefits during periods of higher profitability, excessive reliance on borrowed funds may adversely affect shareholder returns during periods of lower EBIT.

The analysis confirms that an optimal capital structure plays a crucial role in maximizing shareholder wealth. A balanced combination of debt and equity financing, supported by efficient operational management and effective cost control, can enhance profitability and improve the company's overall financial performance.

In conclusion, Visakhapatnam Steel Plant possesses strong operational capabilities and significant growth potential. By adopting prudent financial strategies and maintaining an efficient capital structure, the company can continue to improve its profitability, strengthen investor confidence, and achieve sustainable long-term growth.

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