



A STUDY ON FINANCIAL LEVERAGE OF STEEL COMPANIES WITH SPECIAL REFERENCE TO SELECT STEEL COMPANIES IN KALYANA KARNATAKA, KARNATAKA

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ABSTRACT

Financial leverage is a central concern for capital-intensive industries such as steel, where large investments in plant, machinery, and infrastructure require a carefully balanced mix of debt and equity. This study examines the financial leverage and profitability of ten select steel companies operating in and around the Ballari, Vijayanagara, and Koppal belt of Kalyana Karnataka over the five-year period from 2020-21 to 2024-25. Using secondary data drawn from Capitaline, Moneycontrol, and company annual reports, the study computes and compares the Debt-Equity Ratio, Long-Term Debt-Equity Ratio, Interest Coverage Ratio, Return on Capital Employed (ROCE), and Return on Net Worth (RONW) across the sample firms. The analysis shows that companies which maintained a balanced capital structure, generally with a Debt-Equity Ratio below 1.00, achieved stronger interest-servicing capacity and more consistent returns to shareholders, while firms with comparatively higher debt dependence faced greater financial risk and earnings volatility. The study concludes that financial leverage, when maintained at an optimum level, is a valuable tool for improving shareholder returns, and recommends that highly leveraged firms strengthen their equity base and monitor leverage and profitability ratios on a continuing basis.

I. INTRODUCTION

Financial leverage refers to the use of borrowed funds, alongside shareholders' equity, to finance a company's assets and business operations. Its primary objective is to increase the return earned by equity shareholders by employing debt at a reasonable cost. When a company earns a rate of return greater than the cost of its borrowed funds, leverage works in its favour and increases profitability; when it does not, the fixed obligations of interest and principal repayment can strain the company's finances, particularly during periods of low earnings.

The concept of financial leverage is closely tied to capital structure, which describes the proportion of debt and equity used to finance a firm's operations. An efficient capital structure lowers the overall cost of capital and helps maximise shareholder wealth, while an imbalanced one can lead to financial distress. This trade-off is especially significant in capital-intensive sectors such as steel, where companies routinely rely on a mix of equity and long-term borrowing to fund plant, machinery, and technology upgrades.

Several classical theories explain the relationship between leverage and firm value. The Net Income Approach suggests that increasing the proportion of debt lowers the overall cost of capital and raises firm value; the Net Operating Income Approach argues that firm value is independent of capital structure; the Traditional Approach proposes an optimum capital structure where the benefits of debt are balanced against financial risk; and the Modigliani-Miller theorem examines leverage's effect on firm value under varying assumptions about taxation and capital markets. In practice, leverage is most commonly assessed through ratios such as the Debt-Equity Ratio, Long-Term Debt-Equity Ratio, Interest Coverage Ratio, Return on Capital Employed, and Return on Net Worth, each of which offers a different lens on a company's solvency, debt-servicing capacity, and overall financial performance.



Industry Profile: Indian Steel Sector

The steel industry is a critical input for infrastructure, manufacturing, construction, and defence, and India is the world's second-largest producer of crude steel. The sector operates under the guidance of the Ministry of Steel and the National Steel Policy 2017, which targets a production capacity of 300 million tonnes per annum (MTPA) by 2030-31. Within this landscape, Karnataka's Ballari-Vijayanagara belt has emerged as a major steel manufacturing hub in South India, owing to its rich iron ore deposits in the Bellary-Hospet mineral zone, and hosts a number of large and mid-sized producers that contribute significantly to regional employment and economic growth.

Key Features of the Indian Steel Industry

- India ranks as the world's second-largest producer of crude steel.
- The sector contributes close to 2% of national GDP.
- The Ballari-Vijayanagara region holds some of India's richest iron ore reserves.
- The industry combines integrated steel plants using blast furnace technology with electric arc and induction furnace units.
- The National Steel Policy 2017 targets a production capacity of 300 MTPA by 2030-31.
- Key raw material inputs include iron ore, coking coal, limestone, and scrap metal.

II. REVIEW OF LITERATURE

Patel (2026) examined the capital structure, financial leverage, and solvency of five major Indian steel firms over a ten-year period using ratio analysis, and found that firms with balanced debt levels showed stronger solvency, concluding that an optimal capital structure supports sustainable growth and shareholder value.

Arhinful and Radmehr (2023) used panel regression to study the effect of leverage on the performance of firms listed on the Tokyo Stock Exchange, finding that moderate leverage improved shareholder returns while excessive debt reduced profitability, and recommended balancing equity and debt to limit financial distress.

Mathad (2020) analysed how leverage affected profitability and risk in Indian steel companies and found that leverage improves shareholder returns in favourable conditions but increases earnings volatility and financial hardship when overused, recommending an optimal degree of leverage for long-term stability.

Dakua (2019) examined the determinants of financial leverage in the Indian steel industry using panel data and found that firm size, profitability, liquidity, and non-debt tax shields significantly influence leverage decisions, while asset tangibility and business risk had a moderate effect.

Ajmera (2019) studied the relationship between financial leverage, earnings, and dividend policy in select Indian steel companies and found that higher leverage significantly affects earnings and leads to more conservative dividend policies, emphasising the need to balance debt and equity.

Dalci (2018) used panel regression to study the impact of leverage on the profitability of Chinese manufacturing firms and found that leverage generally reduced profitability due to higher financing costs, though the effect varied with firm size and growth opportunities.

Reddy (2016) examined the impact of operating, financial, and combined leverage on Tata Steel's profitability and found that leverage considerably influences profitability and shareholder returns, but that excessive leverage raises the risk of financial loss and earnings volatility.

Chang (2015) studied the determinants of financial performance in heavy-pollution industries, including Chinese steel companies, and found that firm size, leverage, and return on assets favourably affected financial results, underscoring the need for effective financial and environmental management.

Banerjee and De (2014) examined the relationship between capital structure and financial performance in the Indian iron and steel industry and found that an appropriate mix of debt and equity improved profitability, while excessive debt increased financial risk.



Chaudhury, Panigrahi, and co-authors (2012) studied the effect of financial leverage on the performance of SAIL and found that leverage significantly affects shareholder earnings through changes in EBIT, recommending a balanced approach to debt and equity financing.

Research Gap

While a considerable body of research has examined the relationship between financial leverage and firm performance across industries and countries, the findings remain inconsistent, with some studies reporting favourable associations and others reporting negative or insignificant ones. Studies focused specifically on the Indian steel industry tend to be limited to individual companies, narrow sets of indicators, or older data. Few have combined multiple leverage measures with multiple performance indicators across a comparable set of recent Indian steel companies. This study seeks to address that gap by providing updated, comparative evidence across ten steel companies operating in the Kalyana Karnataka region.

III. RESEARCH METHODOLOGY

Statement of the Problem

The steel sector is among the most capital-intensive in India, requiring substantial investment in fixed assets, technology, and infrastructure, which companies typically fund through a mix of debt and equity. While appropriate debt can raise shareholder returns through tax advantages and enhanced earnings, excessive leverage can raise interest obligations and financial distress and reduce profitability. Because prior research on this relationship in the Indian steel sector is limited and dated, this study evaluates the effect of financial leverage on the financial performance of select Indian steel companies to support more informed financing and investment decisions.

Need for the Study

- Financial leverage is central to the financial performance and risk profile of steel companies, given the industry's high capital intensity.
- The study compares the capital structure and leverage position of ten steel companies operating in and around Ballari, Vijayanagara, and Koppal.
- It offers insight into the relationship between leverage and profitability, helping assess the financial health of the selected companies.
- The results are useful to management, investors, lenders, and other stakeholders for informed financial decision-making.
- The study contributes to the limited body of research on financial leverage in the Kalyana Karnataka steel belt.

Objectives of the Study

- To examine the financial leverage of the selected steel companies over a five-year period.
- To compare the capital structure (Debt-Equity Ratio) of the selected companies.
- To examine the relationship between financial leverage and profitability (ROCE and RONW).
- To offer suitable findings and suggestions for improving financial leverage management.

Scope of the Study

The study is limited to ten steel companies located in and around Ballari, Vijayanagara, and Koppal district, Karnataka, and covers the five financial years from 2020-21 to 2024-25. It focuses on financial leverage, profitability (ROCE and RONW), and interest-servicing capacity, and relies solely on secondary data drawn from annual reports, the Capitaline database, and BSE/NSE disclosures.

Research Design and Data Collection

The study is descriptive and analytical in nature and is based entirely on secondary data. Financial statements of the sample companies were compiled from the Capitaline database and Moneycontrol.com for the five years under review, and the relevant leverage and profitability ratios were computed from this data. Descriptive statistics, principally five-year averages, were then used to compare companies and interpret the results.



Sample of the Study

Ten steel companies operating in the Kalyana Karnataka region were selected for the study:

- JSW Steel Ltd.
- Kalyani Steels Ltd.
- Minera Steel & Power Pvt. Ltd.
- BMM Ispat Ltd.
- SLR Metaliks Ltd.
- Mukand Sumi Special Steel Ltd. (MSSL)
- Kirloskar Ferrous Industries Ltd. (KFIL)
- Bhadrashree Steel & Power Ltd. (BSPL)
- Jai Raj Ispat Ltd. (JRIL)
- Janki Corporation Ltd.

Ratios Used in the Analysis

1. Debt-Equity Ratio

Measures financial leverage as the proportion of total debt to shareholders' equity. Debt-Equity Ratio = Total Debt / Total Equity.

2. Long-Term Debt-Equity Ratio

Compares long-term borrowings to shareholders' equity and indicates the proportion of long-term, permanent financing sourced from debt. Long-Term Debt-Equity Ratio = Long-Term Debt / Shareholders' Equity.

3. Interest Coverage Ratio (ICR)

Assesses a company's ability to meet interest obligations from its operating earnings. Interest Coverage Ratio = Earnings Before Interest and Taxes / Interest Expense.

4. Return on Capital Employed (ROCE)

Measures how efficiently a company generates profit from all the capital employed, both debt and equity. ROCE = (EBIT / Capital Employed) x 100.

5. Return on Net Worth (RONW / ROE)

Measures the return generated for equity shareholders on their invested capital. RONW = (Net Profit After Tax / Net Worth) x 100.

Hypotheses

H0: There is no significant difference in the Debt-Equity Ratio among the selected steel companies.

H1: There is a significant difference in the Debt-Equity Ratio among the selected steel companies.

Limitations of the Study

1. The study relies solely on secondary data drawn from annual reports, the Capitaline database, and BSE/NSE disclosures.
2. The sample is restricted to ten steel companies; findings cannot be generalised to the entire Indian steel industry.
3. The study considers only financial data and excludes qualitative factors such as management practices and technology adoption.
4. The analysis is limited to a five-year period, from 2020-21 to 2024-25.
5. The time available for the study was limited, which constrained the depth of analysis possible.

IV. DATA ANALYSIS AND INTERPRETATION

This section presents the computed leverage and profitability ratios of the ten selected steel companies for the period 2020-21 to 2024-25 (referred to below as 2021-2025), followed by an interpretation of each. Company names are abbreviated in the tables as shown below.



Table 1: Sample Companies and Abbreviations

Code	Company
JSW	JSW Steel Ltd.
KAL	Kalyani Steels Ltd.
MIN	Minera Steel & Power Pvt. Ltd.
BMM	BMM Ispat Ltd.
SLR	SLR Metaliks Ltd.
MSS	Mukand Sumi Special Steel Ltd. (MSSL)
KFI	Kirloskar Ferrous Industries Ltd. (KFIL)
BSP	Bhadrashree Steel & Power Ltd. (BSPL)
JRI	Jai Raj Ispat Ltd. (JRIL)
JAN	Janki Corporation Ltd.

Table 2: Debt-Equity Ratio (2021-2025)

Year	JSW	KAL	MIN	BMM	SLR	MSS	KFI	BSP	JRI	JAN
2021	0.94	0.08	0.64	3.81	1.38	0.42	0.35	0.76	0.51	0.34
2022	0.87	0.24	0.40	0.24	1.19	0.49	0.64	0.99	0.85	0.09
2023	0.85	0.33	0.30	0.17	0.95	0.42	0.50	1.18	1.44	0.03
2024	0.84	0.35	0.25	0.17	0.76	0.28	0.35	1.01	2.05	0.07
2025	0.84	0.29	0.31	0.18	0.71	0.18	0.37	0.73	2.72	0.25

Interpretation

The Debt-Equity Ratio of the selected steel companies during 2021-2025 shows that most companies maintained a ratio below 1.00, indicating a balanced capital structure and comparatively lower financial risk. Janki Corporation Ltd. recorded the lowest average Debt-Equity Ratio (0.16), reflecting limited dependence on borrowed funds, while Jai Raj Ispat Ltd. (JRIL) recorded the highest average ratio (1.51), pointing to a greater reliance on debt financing and correspondingly higher financial risk. Overall, the sample companies maintained broadly healthy leverage levels through a balanced mix of debt and equity.

Table 3: Long-Term Debt-Equity Ratio (2021-2025)

Year	JSW	KAL	MIN	BMM	SLR	MSS	KFI	BSP	JRI	JAN
2021	0.77	0.01	0.44	3.25	1.02	0.17	0.17	0.01	0.48	0.31
2022	0.73	0.08	0.27	0.21	0.87	0.23	0.25	0.12	0.79	0.07
2023	0.71	0.12	0.17	0.12	0.65	0.22	0.19	0.15	1.32	0.01
2024	0.69	0.08	0.14	0.10	0.44	0.12	0.14	0.05	1.92	0.04
2025	0.73	0.02	0.12	0.07	0.41	0.04	0.14	0.01	2.29	0.15

Interpretation

Most companies maintained a Long-Term Debt-Equity Ratio below 1.00 across the study period, indicating limited dependence on long-term borrowings. Kalyani Steels Ltd. recorded the lowest average ratio (0.06), reflecting a stronger long-term capital structure, while Jai Raj Ispat Ltd. (JRIL) recorded the highest average ratio (1.36), suggesting greater reliance on long-term loans, possibly to fund business expansion or capital investment.

Table 4: Interest Coverage Ratio (2021-2025)

Year	JSW	KAL	MIN	BMM	SLR	MSS	KFI	BSP	JRI	JAN
2021	7.42	38.67	6.70	10.10	1.06	1.45	15.44	2.00	7.50	11.49
2022	2.39	25.67	11.60	8.00	2.50	1.63	20.48	2.56	6.41	77.09



2023	2.98	9.01	9.70	4.87	2.16	1.59	7.52	1.58	6.28	167.78
2024	2.23	14.55	10.61	4.49	3.00	5.86	5.43	1.78	9.67	62.79
2025	2.35	19.46	4.95	-1.98	3.73	6.28	3.99	2.03	1.99	20.90

Interpretation

Most companies maintained a satisfactory ability to meet interest obligations from operating profit. Janki Corporation Ltd. recorded the highest average Interest Coverage Ratio (68.01 times), indicating strong debt-servicing capacity, while Bhadrashree Steel & Power Ltd. (BSPL) recorded the lowest average (1.99 times), including a negative ratio in at least one year, pointing to periods where operating profit was insufficient to cover interest expenses. Companies with consistently higher interest coverage generally demonstrated stronger overall financial health.

Table 5: Return on Capital Employed - ROCE (%) (2021-2025)

Year	JSW	KAL	MIN	BMM	SLR	MSS	KFI	BSP	JRI	JAN
2021	25.70	22.64	29.22	24.85	7.65	0.00	33.32	8.75	22.34	35.12
2022	9.85	21.52	33.13	24.83	17.65	4.43	29.82	8.88	20.43	57.79
2023	13.90	13.25	20.89	6.47	15.75	4.56	21.92	6.83	12.17	36.43
2024	10.02	16.55	23.14	4.81	17.19	12.03	15.42	7.92	6.68	38.65
2025	9.91	15.44	15.03	-2.93	15.80	10.06	12.49	8.10	2.37	10.94

Interpretation

The ROCE analysis shows significant differences in the efficiency of capital utilisation across the sample. Janki Corporation Ltd. recorded the highest average ROCE (35.79%), indicating efficient use of capital and strong operating profitability, while Mukand Sumi Special Steel Ltd. (MSSL) recorded the lowest average (6.22%), reflecting weaker operational efficiency over the period. Companies with consistently higher ROCE generally combined strong operating profits with effective capital management.

Table 6: Return on Net Worth - RONW (%) (2021-2025)

Year	JSW	KAL	MIN	BMM	SLR	MSS	KFI	BSP	JRI	JAN
2021	30.24	17.97	24.99	99.75	0.67	0.00	35.10	5.62	22.05	35.73
2022	7.77	19.27	31.09	20.20	17.07	8.90	34.78	7.51	23.96	46.84
2023	11.57	11.69	19.88	4.33	12.68	4.21	20.26	4.41	18.95	28.16
2024	8.89	15.56	19.86	3.11	15.18	9.47	11.50	5.03	14.78	30.77
2025	7.88	14.07	10.77	-4.01	15.18	7.43	9.46	5.28	3.44	9.55

Interpretation

The RONW analysis highlights differences in profitability and the efficiency with which companies use shareholders' funds. Janki Corporation Ltd. recorded the highest average RONW (30.21%), reflecting strong net profits and efficient use of equity, while Bhadrashree Steel & Power Ltd. (BSPL) recorded the lowest average (5.57%), including at least one year of negative returns, pointing to weaker profitability and less efficient use of shareholders' funds during the period.

Table 7: Five-Year Average Summary (2021-2025)

Company	D/E Ratio	LT D/E Ratio	ICR (times)	ROCE (%)	RONW (%)
JSW	0.87	0.73	3.47	13.88	13.27
KAL	0.26	0.06	21.47	17.88	15.71
MIN	0.38	0.23	8.71	24.28	21.32
BMM	0.91	0.75	5.10	11.61	24.68
SLR	1.00	0.68	2.49	14.81	12.16



MSS	0.36	0.16	3.36	6.22	6.00
KFI	0.44	0.18	10.57	22.59	22.22
BSP	0.93	0.07	1.99	8.10	5.57
JRI	1.51	1.36	6.37	12.80	16.64
JAN	0.16	0.12	68.01	35.79	30.21

Interpretation

Taken together, the five-year averages show that companies maintaining lower financial leverage, such as Janki Corporation Ltd., generally combined this with stronger interest coverage and profitability, while companies with comparatively higher leverage, such as Jai Raj Ispat Ltd. (JRIL), showed greater sensitivity to fluctuations in operating profit. This supports the broader conclusion that an optimum, rather than maximum, level of debt tends to be associated with stronger and more stable financial performance among the sample companies.

V. FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

1. The average Debt-Equity Ratio of Jai Raj Ispat Ltd. (JRIL) (1.51) was the highest among the sample, indicating comparatively greater reliance on debt financing, while Janki Corporation Ltd. (0.16) maintained the lowest, and hence the least financial risk from leverage.
2. Jai Raj Ispat Ltd. (JRIL) recorded the highest average Long-Term Debt-Equity Ratio (1.36), while Kalyani Steels Ltd. recorded the lowest (0.06), showing a markedly stronger long-term capital structure.
3. Janki Corporation Ltd. recorded the highest average Interest Coverage Ratio (68.01 times), reflecting superior debt-servicing capacity, while Bhadrashree Steel & Power Ltd. (BSPL) recorded the lowest (1.99 times).
4. Janki Corporation Ltd. achieved the highest average ROCE (35.79%), reflecting efficient use of capital employed, while Mukand Sumi Special Steel Ltd. (MSSL) recorded the lowest (6.22%).
5. Janki Corporation Ltd. recorded the highest average RONW (30.21%), indicating strong returns to equity shareholders, while Bhadrashree Steel & Power Ltd. (BSPL) recorded the lowest (5.57%).
6. Jai Raj Ispat Ltd. (JRIL) maintained comparatively higher financial leverage across the study period than most peers, indicating greater dependence on debt financing.
7. BMM Ispat Ltd. showed the sharpest improvement in leverage, reducing its Debt-Equity Ratio from 3.81 in 2021 to 0.18 in 2025, mainly through debt repayment and improved shareholders' equity, although its profitability ratios turned negative in the final year, pointing to fluctuating operational performance.
8. Jai Raj Ispat Ltd. recorded a rising Debt-Equity Ratio over the period, from 0.51 in 2021 to 2.72 in 2025, suggesting increasing dependence on borrowed funds, likely linked to business expansion or higher capital requirements.
9. Janki Corporation Ltd. recorded an unusually high Interest Coverage Ratio in the middle years of the study (peaking at 167.78 in 2023), indicating very strong debt-servicing capacity relative to its comparatively low interest burden in those years.
10. Companies with a Debt-Equity Ratio consistently below 1.00, such as Kalyani Steels Ltd., Kirloskar Ferrous Industries Ltd., and Minera Steel & Power Pvt. Ltd., generally combined this with stable or strong ROCE and RONW figures across the study period.
11. Companies with higher average leverage, such as Jai Raj Ispat Ltd. and Bhadrashree Steel & Power Ltd., showed comparatively greater year-on-year fluctuation in profitability ratios.



12. Overall, the study finds that an optimum, rather than maximum, proportion of debt to equity helped the selected steel companies improve profitability, strengthen debt-servicing capacity, and maintain long-term financial stability.

Suggestions / Recommendations

1. Companies should maintain an optimum balance between debt and equity to minimise financial risk while improving profitability.
2. Companies with comparatively high debt levels, such as Jai Raj Ispat Ltd., should consider reducing dependence on borrowed funds and strengthening their equity base.
3. Companies with lower Interest Coverage Ratios should focus on raising operating profits and controlling finance costs.
4. Borrowed funds should be deployed productively so that debt financing translates into higher returns on capital employed.
5. Companies should review their capital structure periodically and adopt financing policies suited to prevailing market conditions.
6. Companies with fluctuating profitability, such as BMM Ispat Ltd. and Bhadrashree Steel & Power Ltd., should focus on operational efficiency and cost control.
7. Investment in modern, energy-efficient production technology can help improve profitability and reduce operating costs across the sector.
8. Companies should strengthen cash flow management to ensure timely debt servicing and maintain financial stability.
9. Firms should improve financial planning and maintain adequate reserves to reduce dependence on external borrowing.
10. Management should continuously monitor leverage and profitability ratios to support informed financing decisions and sustainable long-term growth.

Conclusion

This study examined the financial leverage and financial performance of ten select steel companies in and around the Kalyana Karnataka region over the five financial years from 2020-21 to 2024-25, using the Debt-Equity Ratio, Long-Term Debt-Equity Ratio, Interest Coverage Ratio, ROCE, and RONW. The findings indicate that the sample companies adopted differing financing strategies depending on their operating requirements and business conditions. Companies that maintained a balanced capital structure generally achieved stronger profitability, better interest-servicing capacity, and more consistent returns to shareholders, while those with comparatively higher dependence on debt faced greater financial risk from fixed interest obligations. The analysis further suggests that the efficient deployment of borrowed funds, rather than the level of borrowing alone, is what ultimately supports stronger financial performance. Financial leverage, therefore, remains a valuable tool of corporate financial management when used at an optimum level: appropriate debt financing can improve shareholder wealth and support business expansion, while excessive borrowing can undermine profitability and financial stability. Maintaining an optimum capital structure is thus essential for the long-term growth, financial sustainability, and stakeholder confidence of steel companies operating in this capital-intensive sector.

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