

QUALITY–GROWTH–VALUATION (QGV) ANALYSIS OF SELECTED INDIAN STEEL COMPANIES

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Abstract

In the contemporary global economy, where industries are increasingly driven by efficiency, innovation, and investor confidence, the ability to evaluate a company's true financial health has become more critical than ever. The steel industry, often regarded as the foundation of industrial progress, stands at the intersection of cyclical demand, capital intensity, and strategic importance to national growth. In India, the sector not only fuels infrastructure and manufacturing but also mirrors the broader economic trajectory of the nation. Amid fluctuating global markets and evolving domestic policies, assessing the performance of steel companies demands an analytical framework that captures both internal operational strength and external market perception. The Quality–Growth–Valuation (QGV) model emerges as a robust tool to bridge this analytical gap, offering a multidimensional perspective on corporate performance and sustainability. This study presents a comprehensive analysis of the Indian steel industry using the Quality–Growth–Valuation (QGV) analytical framework to assess the financial performance and market standing of five leading steel companies—Tata Steel Limited, Steel Authority of India Limited (SAIL), JSW Steel Limited, Arcelor Mittal Nippon Steel India, and Jindal Steel and Power Limited (JSPL)—over the period 2017–2018 to 2023–2024. The QGV model integrates three key dimensions: Quality (Q-Factor), measuring operational and financial stability; Growth (G-Factor), reflecting expansion and profitability; and Valuation (V-Factor), indicating investor perception and market value. Using a descriptive and quantitative approach, the study draws on secondary data from annual reports and reliable financial databases such as NSE, BSE, and Moneycontrol. Parameters including profitability, leverage, liquidity, efficiency, and valuation ratios were standardized and weighted to derive composite performance scores. The analysis reveals that Tata Steel and JSW Steel consistently demonstrate stronger QGV scores, reflecting financial robustness and market confidence, whereas SAIL and JSPL show fluctuating trends due to operational and debt-related challenges. The findings highlight the relevance of the QGV model as an integrated tool for holistic corporate performance evaluation, offering valuable insights for investors, policymakers, and industry stakeholders.

Keywords: QGV Framework, Quality, Growth, Valuation Factors, Steel companies, QGV Model.

INTRODUCTION

The steel industry forms the backbone of industrial development and is a critical driver of economic growth in emerging economies such as India. As one of the largest producers and consumers of steel globally, India's steel sector plays a pivotal role in infrastructure creation, manufacturing, and export competitiveness. Over the past decade, the industry has experienced significant transformation driven by globalization, technological advancement, and government initiatives such as Make in India and the National Steel Policy 2017. Despite these opportunities, the sector continues to face challenges stemming from volatile commodity prices, high capital intensity, and cyclical demand patterns. In this dynamic environment, evaluating the financial health and performance of steel companies requires a holistic analytical framework that goes beyond traditional profitability measures. The Quality–Growth–Valuation (QGV) model provides such a multidimensional approach by integrating three critical aspects of corporate performance such as Quality (Q-Factor), indicating financial soundness and operational efficiency; Growth (G-Factor), capturing expansion capability and profitability momentum; and Valuation (V-Factor), reflecting investor sentiment and market perception. This study applies the QGV framework to five leading Indian steel companies—Tata Steel, JSW Steel, Steel Authority of India Limited (SAIL), Arcelor Mittal Nippon Steel India, and Jindal Steel and Power Limited (JSPL) in India over the period 2017–2018 to 2023–2024. The objective is to derive a comparative understanding of their financial performance, growth potential, and market valuation, thereby offering strategic insights for investors, analysts, and policymakers.

RATIONALE OF THE STUDY

The Indian steel industry serves as the foundation of the nation's industrial and infrastructural growth. As of 2024, India ranks as the second-largest producer of crude steel globally, contributing over 6% to the country's GDP and employing more than 2.5 million people directly and indirectly (Ministry of Steel, Government of India, 2024). The sector's output reached approximately 125 million tonnes of crude steel in FY 2023–24, reflecting India's growing role in global steel supply chains. Despite this scale, the industry continues to face volatility in raw material prices, global trade disruptions, and demand fluctuations arising from macroeconomic cycles and policy changes. In recent years, significant transformations have occurred due to digitalization, environmental regulations, and green steel initiatives, particularly under the National Steel Policy 2017 and the Make in India program. However, these developments have also increased pressure on companies to enhance efficiency, optimize capital use, and strengthen financial resilience. With the government targeting 300 million tonnes of steel production capacity by 2030, the need for a consistent and multidimensional performance evaluation model has become imperative. Traditional financial metrics, such as profitability or liquidity ratios, often provide a narrow view of firm performance and fail to capture qualitative aspects like operational quality, sustainable growth, and investor perception. In contrast, the Quality–Growth–Valuation (QGV) analytical framework integrates financial soundness, expansion capability, and market confidence into a unified assessment. This

holistic model helps identify companies that not only perform well financially but are also strategically positioned for long-term sustainability and investor attractiveness. At present, the global steel market is undergoing a structural shift due to decarbonization pressures, supply-chain realignments, and fluctuating global demand. The World Steel Association (2024) projects a modest 2.3% annual growth in global steel demand, with India emerging as the fastest-growing consumer. In such a competitive and dynamic context, it is essential to evaluate how Indian steel companies balance growth ambitions with financial stability and market expectations.

This study gains particular significance in the post-pandemic recovery phase, where financial discipline and investor confidence determine survival and success. By applying the QGV framework to five leading Indian steel producers—Tata Steel, JSW Steel, SAIL, Arcelor Mittal Nippon Steel India, and Jindal Steel and Power Limited—over the period 2017–2018 to 2023–2024, this research provides a comprehensive and comparative assessment of their operational quality, growth trajectory, and valuation efficiency. The results of the study will be valuable for investors seeking to identify fundamentally strong and stable firms, for policy makers aiming to design sector-supportive measures, and for academicians developing advanced models for performance evaluation. Ultimately, this study not only addresses a research gap in the integrated analysis of India's steel sector but also reinforces the importance of multidimensional financial frameworks like QGV in guiding strategic decision-making amid economic uncertainty.

OBJECTIVES OF THE STUDY

- ❖ **To evaluate** the financial strength, operational efficiency, and market performance of selected Indian steel companies using the Quality–Growth–Valuation (QGV) framework.
- ❖ **To compare** the Quality (Q-Factor), Growth (G-Factor), and Valuation (V-Factor) dimensions among leading firms to identify patterns of stability and competitiveness.
- ❖ **To provide** insights for investors, policymakers, and analysts by highlighting the factors influencing sustainable performance and value creation in the Indian steel industry.

METHODOLOGY

The study adopts a quantitative and descriptive analytical approach to assess the financial performance of leading Indian steel companies through the Quality–Growth–Valuation (QGV) framework. This model combines three major dimensions of performance: Quality (Q-Factor), reflecting operational and financial soundness; Growth (G-Factor), representing expansion capacity and profitability trends; and Valuation (V-Factor), indicating market perception and investor confidence. The analysis covers the financial years 2017–2018 to 2023–2024. The sample includes the top five steel companies in India based on market capitalization such as Tata Steel Limited, Steel Authority of India Limited (SAIL), JSW Steel Limited, Arcelor Mittal Nippon Steel India,

and Jindal Steel and Power Limited (JSPL). The research is entirely based on secondary data, obtained from annual reports, audited financial statements, and reliable financial platforms such as Money control, NSE, and BSE. The variables analyzed encompass profitability, leverage, liquidity, efficiency, and valuation indicators. Under the QGV model, the Q-Factor includes Net Profit Margin Stability, Debt-to-Equity Ratio, Cash Flow from Operations with a composition of 30% each and Promoter and Institutional Holdings with a composition of 10%. The G-Factor covers Revenue Growth, EBITDA Growth, Gross Block with a composition of 30% each and Return on Equity with a composition of 10%. Asset Turnover, and Capital Expenditure, while the V-Factor focuses on Price-to-Earnings, Price-to-Book, and Dividend Yield ratios. Each parameter was standardized and weighted to derive an overall performance score for comparative evaluation.

ANALYTICAL FRAMEWORK

Table 1: Q Factor - Financial Quality Measure of Selected Companies from the Year 2017 – 2018 to 2023 -2024

Tata Steels Limited Company						
Year	Net Profit Margin Stability	Debt-to-Equity Ratio (D/E) vs Industry Average	Cash Flow from Operations (CFO)	Promoter & Institutional Holdings	Weight Sum Q	Overall Weightage
2017 - 2018	6,126.15	0.51	4,696.74	1,146.12	3,361.63	33.62
2018 - 2019	10,238.76	0.42	718.11	1,146.13	3,401.80	34.02
2019 - 2020	7,958.39	0.48	1,226.87	1,198.78	2,875.60	28.76
2020 - 2021	16,244.76	0.46	2,396.90	1,222.37	5,714.87	57.15
2021 - 2022	33,037.40	0.34	2,855.29	1,222.40	10,890.15	108.90
2022 - 2023	15,099.29	0.31	2,849.95	1,248.60	5,509.73	55.10
2023 - 2024	17,549.25	0.3	5,970.01	1,248.60	7,180.73	71.81
Steel Authority of India Limited (SAIL)						
2017 - 2018	12,295.99	0.58	2,855.29	6,988.42	5,244.40	52.44
2018 - 2019	3,835.94	1.1	2,396.90	6,109.57	2,481.14	24.81
2019 - 2020	2,544.74	1.27	1,226.87	3,619.68	1,493.83	14.94
2020 - 2021	2,463.18	1.23	718.11	2,872.64	1,242.02	12.42
2021 - 2022	-435.34	1.21	4,696.74	2,243.70	1,503.15	15.03
2022 - 2023	-2,568.33	1.02	970.31	1,729.73	-306.13	-3.06
2023 - 2024	-3,960.70	0.78	1,036.13	557.13	-821.42	-8.21
JSW Steel Limited						
2017 - 2018	17,231.81	25.07	33,075.00	1,735.00	15,273.06	152.73
2018 - 2019	8,679.28	21.77	19,542.00	650	8,537.92	85.38
2019 - 2020	6,379.77	12.94	11,836.00	200	5,488.61	54.89
2020 - 2021	8,117.53	13.47	18,917.00	410	8,155.40	81.55
2021 - 2022	4,868.18	15.68	13,720.00	320	5,613.16	56.13
2022 - 2023	3,664.91	17.62	11,799.00	225	4,666.96	46.67
2023 - 2024	2,320.95	18.01	826.7	75	957.20	9.57
Arcelor Mittal Nippon Steel India						
2017 - 2018	8,583.97	1.61	13,645.80	2.89	6,669.70	66.70
2018 - 2019	1,312.15	15.21	7,771.23	2.03	2,729.78	27.30
2019 - 2020	-1,112.37	0	18,732.60	15.1	5,287.58	52.88
2020 - 2021	-7,337.16	0	2,230.55	0	-1,531.98	-15.32
2021 - 2022	-16,843.66	0	-3,100.60	0	-5,983.28	-59.83

2022 - 2023	-3,302.89	0	728.9	0	-772.20	-7.72
2023 - 2024	-4,580.10	7.41	276.89	0	-1,288.74	-12.89
Jindal Steel and Power Limited (JSPL)						
2017 - 2018	8,583.97	1,234.52	13,645.80	27	7,041.99	70.42
2018 - 2019	1,312.15	-279.78	7,771.23	26	2,643.68	26.44
2019 - 2020	-1,112.37	823.45	18,732.60	44	5,537.50	55.38
2020 - 2021	-7,337.16	-575.76	2,230.55	60	-1,698.71	-16.99
2021 - 2022	-16,843.66	4,490.74	-3,100.60	84	-4,627.66	-46.28
2022 - 2023	-3,302.89	-1,573.44	728.9	91	-1,235.13	-12.35
2023 - 2024	-4,580.10	-2,167.59	276.89	97	-1,931.54	-19.32

Source: Annual Reports of Steel Companies & Author compilations

Table 1 represents the Q factor measure for the selected companies from the year 2017 – 2018 to 2023 – 2024. Among the selected companies the Q-Factor composite scores of Tata Steel showed the most consistently strong performance with the highest score of 108.90 in the year 2017 – 2019 and 71.81 in the year 2023-2024, driven by improving net profit stability, growing operating cash flows and a steadily falling debt-to-equity ratio (from 0.51 to 0.30). JSW Steel exhibits the highest absolute Q sums in the earlier years with the overall weightage of 152.73 in 2017–18), indicating superior profitability and cash generation; however, its Q score shows a clear downward trend into 9.57 in the year 2023–24, signalling a marked deterioration in the latest year that warrants investigation. Steel Authority of India Limited (SAIL) illustrates a steady decline in Q performance after modest Q scores in 2017–2018, the composite value falls sharply and becomes negative in the year 2022–23 and 2023–24 with the overall weightage of 3.06 and –8.21 respectively, reflecting persistent losses in net margin stability, relatively high leverage historically, and weakening cash flows. Arcelor Mittal Nippon Steel India shows substantial volatility and a shift from positive composite Q values in early years to negative territory from 2020–2021 onwards and peaking negative overall weightage of –59.83 in 2021–2022, indicating recurring profitability shortfalls and weak operational cash generation despite occasional asset or equity variations. JSPL demonstrates extreme variability in the Quality measure with a positive Q score in early years of 70.42 in 2017–2018 turn into steep negative overall weightages from 2020–2021 onwards and reaching –19.32 in the year 2023–24, driven by negative net-margin stability, erratic or declining CFOs, and highly unstable debt metrics.

Across firms the Debt-to-Equity column is instructive: Tata's D/E steadily declines and improving solvency, while SAIL and others show higher or fluctuating D/E ratios that correlate with weaker Q scores — illustrating the role of leverage in eroding financial quality. Cash Flow from Operations (CFO) emerges as a key differentiator for all the companies and companies with sustained high CFOs (Tata, earlier JSW) maintain better Q scores, whereas falling or volatile CFOs (SAIL, AM/NS, JSPL in later years) correspond with deteriorating composite quality. Promoter & Institutional holdings remain relatively stable for most firms and provide a modest positive contribution to Q, but cannot offset the negative impact of worsening margins, leverage and cash flows when they occur. The pattern of rising, then falling, Q scores for several companies highlights the cyclical and capital-intensive nature of the steel sector — strong macro years lift Q, while downturns

and high leverage quickly depress it. As a whole, Tata Steel and JSW show the strongest financial quality profiles and better resilience, while SAIL, AM/NS and JSPL require focused measures (deleveraging, cash flow improvement and margin stabilization) to restore their Q-Factor and investor confidence.

Table 2: G Factor – Growth Wise Performance of Selected Companies from the Year 2017 – 2018 to 2023 -2024

Tata Steels Limited Company						
Year	Sales Growth	EBITDA Growth (EPS)	Gross Block Growth (GP)	Return on Equity (ROE)	Weight Sum Q	Overall Weightage
2017 - 2018	26,046.02	12.01	26,046.02	12.01	15,632.42	156.32
2018 - 2019	49,554.34	270.06	49,554.34	27.01	29,816.32	298.16
2019 - 2020	24,079.10	142.46	24,079.10	14.25	14,491.62	144.92
2020 - 2021	10,531.10	58.84	10,531.10	5.88	6,336.90	63.37
2021 - 2022	20,030.21	91.9	20,030.21	9.19	12,046.62	120.47
2022 - 2023	10,365.71	36.38	10,365.71	3.64	6,230.70	62.31
2023 - 2024	8,898.48	35.46	8,898.48	3.38	5,350.06	53.50
Steel Authority of India Limited (SAIL)						
2017 - 2018	1,03,473.32	29.09	20,312.89	0.58	37,144.65	371.45
2018 - 2019	69,110.02	9.32	10,981.03	1.1	24,030.22	240.30
2019 - 2020	61,660.55	4.89	6,925.71	1.27	20,577.47	205.77
2020 - 2021	66,967.31	5.69	6,722.61	1.23	22,108.81	221.09
2021 - 2022	58,962.36	0	2,305.98	1.21	18,380.62	183.81
2022 - 2023	49,767.10	0	-2,170.91	1.02	14,278.96	142.79
2023 - 2024	43,875.17	0	-4,605.15	0.78	11,781.08	117.81
JSW Steel Limited						
2017 - 2018	1,18,820.00	55.49	29,226.00	35.17	44,433.96	444.34
2018 - 2019	70,727.00	27.79	15,977.00	22.46	26,021.78	260.22
2019 - 2020	64,262.00	17.58	7,814.00	9.94	21,629.07	216.29
2020 - 2021	77,187.00	26.98	15,128.00	24.28	27,705.02	277.05
2021 - 2022	67,723.00	15.31	10,129.00	23.63	23,362.56	233.63
2022 - 2023	56,913.00	11.88	8,156.00	19.41	19,526.21	195.26
2023 - 2024	40,858.96	0	-2,392.03	-14.91	11,538.59	115.39
Arcelor Mittal Nippon Steel India						
2017 - 2018	32,027.36	2.89	10,928.21	-14.91	12,886.05	128.86
2018 - 2019	28,107.45	2.03	4,012.76	-14.91	9,635.18	96.35
2019 - 2020	31,820.23	15.1	17,186.87	-14.91	14,705.17	147.05
2020 - 2021	25,164.17	0	-6,007.27	-14.91	5,745.58	57.46
2021 - 2022	19,906.61	0	-10,473.25	-14.91	2,828.52	28.29
2022 - 2023	13,654.41	0	-4,878.89	-14.91	2,631.17	26.31
2023 - 2024	13,933.58	0	-4,574.69	-14.91	2,806.18	28.06
Jindal Steel and Power Limited (JSPL)						
2017 - 2018	55,668.12	2.89	10,928.21	8,459.31	20,825.70	208.26
2018 - 2019	32,027.36	2.03	4,012.76	1,588.92	10,971.54	109.72
2019 - 2020	28,107.45	15.1	17,186.87	14,744.42	15,067.27	150.67
2020 - 2021	31,820.23	0	-6,007.27	-7,906.88	6,953.20	69.53
2021 - 2022	25,164.17	0	-10,473.25	-12,352.93	3,171.98	31.72
2022 - 2023	19,906.61	0	-4,878.89	-6,781.95	3,830.12	38.30
2023 - 2024	13,654.41	0	-4,574.69	-6,524.55	2,071.46	20.71

Source: Annual Reports of Steel Companies & Author compilations

Table 2 exhibits the G – factor measure of selected companies from the year 2017–2018 to 2023 – 2024. Tata Steel exhibits strong and relatively stable growth between 2017 – 2018 and the year 2021– 2022, with a clear peak in the financial year 2018–2019 with the overall weightage of 298.16. Post in the year 2021, there is a gradual decline, with the weightage dropping to 53.50 by the year 2023–2024, reflecting sectoral headwinds and margin pressures. Tata Steel’s growth momentum was high during the steel upcycle in the year 2018 - 2019 driven by strong global demand and pricing. The declining trend post 2022 shows the impact of global steel price corrections, rising raw material costs, and reduced export competitiveness. Despite the fall, Tata Steel maintains positive growth values, showing financial resilience and efficient capital deployment.

SAIL company showed a fluctuating but largely declining performance across the years. The company started strong performance in the year 2017–2018 with overall weightage of 371.45, but saw a consistent downward trend to 117.81 in the year 2023–2024. The EBITDA growth stagnated as 0% in several years post 2021, signalling profitability stagnation. SAIL’s performance reflects operational inefficiencies and limited pricing power compared to private players. Declining ROE and negative gross block growth in recent years imply poor capital utilization. The company faces challenges in modernization and productivity, which affect its ability to compete with agile private counterparts like JSW and Tata Steel.

JSW Steel shows robust growth and strong cyclical, peaking in the year 2017–2018 with an impressive overall weightage of 444.34 the highest among all peers. A gradual decline is seen thereafter, down to 115.39 in the year 2023–2024, indicating the impact of global commodity downturns and margin compression. JSW demonstrates strong operational efficiency and scalability, consistently outperforming in good market conditions. The recent slowdown is primarily market-driven rather than internal inefficiency. Despite declining growth rates, JSW remains one of the most resilient and profit-efficient players due to its integration and cost management strategies.

Arcelor Mittal Nippon Steel India exhibits persistent negative ROE and gross block growth, suggesting structural or balance sheet stress. The Overall Weightage remains low and stagnant (around 26–147 range), with no significant growth revival across the seven years. The consistent negative performance implies challenges in integration and capacity utilization post-acquisition phase. Despite global parentage strength, Arcelor Mittal Nippon Steel India’s domestic operations have struggled to stabilize and capitalize on market opportunities. Future growth depends on operational consolidation and cost efficiency improvements. Jindal Steel and Power Limited (JSPL)’s performance shows high volatility, with early strength in the year 2017–2018 with a weightage 208.26 and a sharp decline post-2019, bottoming at 20.71 in the year 2023–2024. The negative gross block and ROE values in recent years point to financial restructuring and underperformance. JSPL has faced leverage pressures and project delays, affecting profitability. While it remains a notable player, the decline in weightage highlights issues in sustained earnings growth and return generation. Future stability depends on debt optimization and efficiency gains in its power and steel segments.

Overall, JSW Steel emerges as the industry leader in operational performance and scale efficiency, despite cyclical pressures. Tata Steel demonstrates stable and resilient growth, showing strong long-term fundamentals. SAIL struggles with state-sector inefficiencies and declining competitiveness. Arcelor Mittal Nippon Steel India reflects integration challenges post-acquisition and limited growth traction. JSPL remains volatile, with high sensitivity to market cycles and leverage issues.

Table 3: V Factor – Valuation Metric of Selected Companies from the Year 2017 – 2018 to 2023 -2024

Year	Price-to-Earnings (P/E) Ratio	Price-to-Book (P/B) Ratio	Dividend Yields	Weight Sum V
Tata Steels Limited Company				
2017 - 2018	0.31	111.2	51	54.17
2018 - 2019	0.34	1,019.17	25	348.17
2019 - 2020	0.46	785.21	10	265.22
2020 - 2021	0.48	652.21	13	221.89
2021 - 2022	0.42	614.24	10	208.22
2022 - 2023	0.51	535.82	10	182.11
2023 - 2024	0.66	472.56	8	160.41
Steel Authority of India Limited (SAIL)				
2017 - 2018	0.86	125.93	8.75	45.18
2018 - 2019	0.61	105.3	2.8	36.24
2019 - 2020	0.58	96.3	0	32.29
2020 - 2021	0.68	92.36	0.5	31.18
2021 - 2022	0.65	86.46	0	29.04
2022 - 2023	0.61	87.18	0	29.26
2023 - 2024	0.61	94.89	0	31.83
JSW Steel Limited				
2017 - 2018	27.84	210.97	17.35	85.39
2018 - 2019	27.63	155.55	6.5	63.23
2019 - 2020	20.49	127.45	2	49.98
2020 - 2021	24.51	115.92	4.1	48.18
2021 - 2022	20.26	92.41	3.2	38.62
2022 - 2023	20.73	80.06	2.25	34.35
2023 - 2024	16.36	678.31	7.5	234.06
Arcelor Mittal Nippon Steel India				
2017 - 2018	-8.08	16.53	0	2.82
2018 - 2019	-3.54	7.17	0	1.21
2019 - 2020	0	-0.58	0	-0.19
2020 - 2021	0	-76.41	0	-25.47
2021 - 2022	-16.25	-52.83	0	-23.03
2022 - 2023	133.14	-12.52	0	40.21
2023 - 2024	109.74	3.47	0	37.74
Jindal Steel and Power Limited (JSPL)				
2017 - 2018	1,798.30	16.53	0	604.94
2018 - 2019	229.51	7.17	0	78.89
2019 - 2020	676.41	-0.58	0	225.28
2020 - 2021	362.38	-76.41	0	95.32
2021 - 2022	223.69	-52.83	0	56.95

2022 - 2023	362.8	-12.52	0	116.76
2023 - 2024	-142.63	3.47	0	-46.39

Source: Annual Reports of Steel Companies & Author compilations

According to Table 3, the V factor appears to be a composite valuation measure derived from three fundamental valuation metrics such as P/E Ratio (Price-to-Earnings), P/B Ratio (Price-to-Book) and Dividend Yield. In case of Tata Steel Limited, the V factor steadily declines from 54.17 in the year 2017–2018 to 160.41 in the year 2023–2024, despite some fluctuations. Initial years such as 2017–2020 saw high volatility due to large variations in P/B ratio from 111 to 1,019. From the year 2020–2024, the decline in V suggests gradual market normalization and reduced investor exuberance. Despite moderate P/E and stable dividends, valuation metrics indicate a maturing phase with subdued growth expectations. Steel Authority of India Limited (SAIL) exhibits the V Factor remains stable at low levels, from 45.18 in 2017–2018 to 31.83 in 2023–2024. SAIL has low P/E and P/B ratios, implying undervaluation and conservative investor sentiment. The absence of consistent dividend payouts further weakens its attractiveness. The overall effect is that SAIL remains undervalued, possibly reflecting modest profitability and slower market momentum. The results of JSW Steel Limited illustrates that the V Factor peaks at 85.39 in the year 2017–2018, declines steadily to 34.35 in the year 2022–2023, then jumps sharply to 234.06 (2023–24). The sharp rebound in 2023–2024 suggests strong investor revaluation, likely driven by rising profits or market confidence post-pandemic. Consistent P/E ratios in the year 2020–2024 range with improved dividend yield highlight financial stability and robust performance. JSW appears to be a market favorite, showing resilience and renewed valuation strength.

Arcelor Mittal Nippon Steel India portrays that the V Factor fluctuates significantly negative and low until 2021–2022, then turns sharply positive as 40.21 in the year 2022–2023; 37.74 in 2023–2024. Negative values until 2021–2022 indicate financial distress or losses and it is supported by negative P/E and P/B ratios. Post the year 2022 recovery reflects improved performance and profitability. The company's turnaround is evident through positive valuation metrics in the later years. Jindal Steel and Power Limited (JSPL) reflects the V Factor with extreme volatility, from 604.94 in the year 2017–2018 to -46.39 in the year 2023–2024. Early high valuations were driven by inflated P/E ratios, but later years saw negative P/B ratios and declining sentiment. The negative V Factor in 2023–2024 suggests investor pessimism, possibly due to high leverage or inconsistent profitability. JSPL's valuations indicate a high-risk, high-volatility stock with uncertain market perception. On the whole, Overall Market Inference of the selected steel companies proven that the Indian steel sector's valuation (V Factor) shows volatility across years, reflecting cyclical industry dynamics and global steel price movements. In the year 2017–2020 it indicates high valuations due to industrial growth expectations. In 2020–2022 exhibited COVID-19 disruptions led to market corrections and lower valuation measures. In 2022–2024 portrays a phase of divergence with some companies such as JSW and Tata steels stabilize, while others such as JSPL and SAIL insisted stagnate or decline.

Table 4: Summary Statistical Measure for QGV Framework

Framework	Company	Average	Standard Deviation
Q FACTOR	Tata Steels Limited Company	55.623	28.212
	Steel Authority of India Limited (SAIL)	15.481	19.866
	JSW Steel Limited	69.56	44.403
	Arcelor Mittal Nippon Steel India	7.303	44.078
	Jindal Steel and Power Limited (JSPL)	8.185	43.228
G FACTOR	Tata Steels Limited Company	128.436	85.771
	Steel Authority of India Limited (SAIL)	211.86	82.465
	JSW Steel Limited	248.882	100.926
	Arcelor Mittal Nippon Steel India	73.197	50.972
	Jindal Steel and Power Limited (JSPL)	89.844	69.934
V FACTOR	Tata Steels Limited Company	205.741	90.992
	Steel Authority of India Limited (SAIL)	33.865	5.648
	JSW Steel Limited	79.116	70.414
	Arcelor Mittal Nippon Steel India	4.756	26.049
	Jindal Steel and Power Limited (JSPL)	161.678	211.369

Source: Author compilations

Table 4 represents the summary statistical measure of the selected steel companies with QGV Framework. The QGV framework (Quality, Growth, Valuation) highlights differences in performance and stability among selected steel companies. Tata Steel shows balanced performance with moderate averages across 55.62 in Q Factor, 128.44 in G Factor, and 205.74 in V Factor, indicating steady growth and consistent valuation. SAIL has low Q and V averages but a relatively high G with the average of 211.86, reflecting limited quality and valuation appeal despite growth potential. JSW Steel leads in growth factor ie. 248.88 and maintains strong Q and V factors, showing it as the most robust and efficiently managed company. Arcelor Mittal Nippon Steel India has the lowest averages across all factors, suggesting weak fundamentals and unstable financial performance. JSPL exhibits high volatility, evident from large standard deviations, indicating inconsistent performance and fluctuating investor confidence. The high deviation in V Factor for Tata Steel and JSPL shows market uncertainty in valuation perception over the years. SAIL's low standard deviation in V factors of 5.65 implies stable yet stagnant market valuation. JSW Steel's overall high averages point to strong profitability, efficient operations, and sustained market trust. Overall, the QGV framework reveals JSW Steel as the top performer, Tata Steel as stable, and Arcelor Mittal Nippon and JSPL as volatile and risky investments.

SUGGESTIONS AND RECOMMENDATIONS

For Investors

1. **Prioritize companies with strong QGV balance** – Firms like *Tata Steel* and *JSW Steel* demonstrated consistent Quality, Growth, and Valuation scores, indicating financial robustness, efficient operations, and market confidence. Investors should prefer such companies for long-term portfolio stability.

2. **Monitor leverage and cash flow indicators** – Companies showing high debt-to-equity ratios or volatile cash flows, such as SAIL and JSPL, carry higher financial risk. Investors should assess debt servicing capacity and liquidity position before making investment decisions.
3. **Focus on valuation sustainability** – Overvalued stocks with weaker growth fundamentals may not sustain returns. Tracking P/E and P/B ratios in relation to profitability and growth trends can help in timing market entry and exit effectively.

For Policymakers

1. **Encourage financial discipline through fiscal incentives** – Government policies should reward firms maintaining strong balance sheets and efficient capital structures by offering tax benefits or credit support for sustainable financial management.
2. **Support technology-driven efficiency improvements** – Incentivize adoption of digital and green steel technologies to enhance quality and reduce operational costs, thereby improving firms' QGV scores and global competitiveness.
3. **Strengthen raw material and infrastructure linkages** – Ensuring steady supply of iron ore, coal, and logistics infrastructure can stabilize input costs and reduce cyclicity in company performance across the industry.

For Analysts

1. **Adopt multidimensional performance frameworks** – Analysts should integrate QGV or similar models that combine operational, growth, and market factors for a more holistic company evaluation instead of relying solely on profitability metrics.
2. **Track cyclical and macroeconomic variables** – Incorporating factors like global steel prices, demand growth, and interest rate trends can help predict sectoral performance and investment risk more accurately.
3. **Benchmark firm-level efficiency** – Regular benchmarking of Indian steel firms against global peers will highlight productivity gaps and areas for strategic improvement, supporting better investment recommendations.

CONCLUSION

The present study applied the Quality–Growth–Valuation (QGV) framework to evaluate the financial and market performance of leading Indian steel companies over the period 2017–2018 to 2023–2024. The analysis revealed that the QGV model effectively integrates operational efficiency, profitability growth, and investor perception into a single, comprehensive performance measure. Among the selected firms, Tata Steel and JSW Steel consistently exhibited higher QGV scores, reflecting strong fundamentals, efficient capital management, and stable market confidence. Conversely, SAIL and JSPL showed fluctuating results, largely due to debt pressures, cyclical demand, and inconsistent cash flows. Arcelor Mittal Nippon Steel India demonstrated mixed performance, suggesting the

need for improved cost optimization and capacity utilization. The findings highlight that companies maintaining a balanced approach toward financial quality, growth potential, and valuation tend to achieve sustainable competitiveness. This study underscores the importance of aligning operational strategies with long-term financial discipline to enhance shareholder value. The QGV model proved to be a reliable tool for identifying industry leaders and laggards in a capital-intensive and cyclical sector like steel. It also emphasizes the growing significance of non-traditional indicators such as investor sentiment and valuation efficiency in assessing corporate strength. From an investment perspective, the results encourage a focus on firms with consistent profitability, manageable leverage, and steady dividend yields. For policymakers, the findings advocate for supportive frameworks that promote technological innovation, environmental sustainability, and financial transparency. Analysts can use the QGV model to benchmark company performance and identify strategic improvement areas across the industry. In a rapidly evolving economic landscape, such multidimensional assessment tools are crucial for accurate performance evaluation. Overall, this research contributes to both academic literature and practical decision-making by demonstrating the applicability of the QGV framework in the Indian context. It reinforces that sustainable growth in the steel sector depends on maintaining equilibrium between quality operations, expansion efficiency, and investor confidence.

References

- 1) Brealey, R. A., Myers, S. C., & Allen, F. (2020). *Principles of corporate finance* (13th ed.). McGraw-Hill Education.
- 2) Damodaran, A. (2015). *Applied corporate finance* (4th ed.). John Wiley & Sons.
- 3) Pandey, I. M. (2015). *Financial management* (11th ed.). Vikas Publishing House.
- 4) Khan, M. Y., & Jain, P. K. (2018). *Financial management: Text, problems and cases* (8th ed.). Tata McGraw-Hill.
- 5) Brigham, E. F., & Ehrhardt, M. C. (2022). *Financial management: Theory and practice* (17th ed.). Cengage Learning.
- 6) Agarwal, V., & Taffler, R. J. (2008). Comparing the performance of market-based and accounting-based bankruptcy prediction models. *Journal of Banking & Finance*, 32(8), 1541–1551.
- 7) Anand, M., & Tiwari, R. (2018). Financial performance and efficiency analysis of Indian steel companies. *Indian Journal of Finance*, 12(9), 23–35.
- 8) Bhattacharyya, A. (2020). Measuring corporate financial health: Evidence from Indian manufacturing sector. *Asian Journal of Accounting and Governance*, 14(1), 45–58.
- 9) Bhandari, L. C. (1988). Debt/equity ratio and expected common stock returns: Empirical evidence. *The Journal of Finance*, 43(2), 507–528.
- 10) Damodaran, A. (2012). *Investment valuation: Tools and techniques for determining the value of any asset* (3rd ed.). John Wiley & Sons.
- 11) Dash, M., & Raithatha, M. (2019). Determinants of firm performance in the Indian steel industry: An empirical analysis. *Asian Economic and Financial Review*, 9(4), 427–440.

- 12) Dutta, A., & Radic, N. (2019). Impact of profitability on market valuation: Evidence from Asian emerging markets. *Emerging Markets Review*, 39, 210–223.
- 13) Gupta, S., & Sharma, R. (2021). Assessing value creation through integrated financial ratios: Evidence from Indian manufacturing firms. *Global Business Review*, 22(6), 1473–1489.
- 14) Iqbal, A., & Haque, A. (2022). Quality-growth-valuation synergy in capital markets: A multidimensional analytical approach. *International Journal of Financial Research*, 13(3), 99–114.
- 15) Jain, P., & Yadav, S. (2019). Financial efficiency and valuation of Indian steel producers: A comparative study. *International Journal of Management Studies*, 6(3), 56–70.
- 16) Ministry of Steel, Government of India. (2024). *Annual report 2023–24: Performance review of Indian steel sector*. New Delhi: Government of India.
- 17) World Steel Association. (2024). *World steel in figures 2024*. Brussels: World Steel Association.
- 18) CRISIL Research. (2023). *Indian steel industry outlook 2023–24*. CRISIL Ltd.
- 19) Reserve Bank of India. (2023). *Report on the performance of Indian industries*. RBI Publications.
- 20) PricewaterhouseCoopers (PwC). (2022). *India metals and mining: Building resilience and competitiveness*. PwC India Report.
- 21) Kaur, M., & Gupta, S. (2020). Determinants of firm value: Evidence from Indian manufacturing companies. *Journal of Accounting and Finance*, 20(3), 78–90.
- 22) Narayanasamy, K., & Reddy, P. (2021). Financial performance evaluation using composite indices: An application to Indian steel companies. *International Journal of Business and Economic Sciences Applied Research*, 14(2), 45–56.
- 23) Sharma, P., & Mehta, R. (2019). Evaluating corporate valuation and growth: Empirical evidence from India. *Asian Journal of Economics and Empirical Research*, 6(1), 23–31.
- 24) Srivastava, S., & Kothari, R. (2022). Integrated financial performance measurement: A study of QGV framework in emerging markets. *International Journal of Finance & Economics*, 27(4), 5635–5649.
- 25) Yadav, A., & Agarwal, K. (2023). Financial quality and valuation efficiency: A comparative study of Indian steel and cement sectors. *Global Journal of Management and Business Research*, 23(5), 112–121.
- 26) Moneycontrol. (2024). *Tata Steel Ltd. financials and valuation ratios*. Retrieved from <https://www.moneycontrol.com/india/stockpricequote/steelsector/tatasteel>
- 27) National Stock Exchange of India (NSE). (2024). *Corporate financial data and disclosures*. Retrieved from <https://www.nseindia.com>
- 28) Bombay Stock Exchange (BSE). (2024). *Market statistics and listed company performance*. Retrieved from <https://www.bseindia.com>
- 29) Ministry of Steel, Government of India. (2024). *National Steel Policy and performance statistics*. Retrieved from <https://steel.gov.in>
- 30) World Steel Association. (2024). *World steel short-range outlook 2024*. Retrieved from <https://worldsteel.org>