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RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 8.276 (12OR), 3.676 (COSMOS)

Volume XIV, Issue 49

October - December 2025

Formally UGC Approved Journal (63185), © Author

A FINANCIAL FOOTPRINTS IN THE PAPER GIANTS OF INDIA; A COMPARATIVE STUDY WITH THE STATISTICAL INSIGHTS

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ABSTRACT

In our country, the India paper manufacturing sector is having significant position and are contributing to education, publishing and packaging. At the same time, they are facing the challenges of resourcing the raw material in these highly competitive markets globally with environment sustainability. In this context, the financial performance of paper manufacturing giant companies who has become pivotal indicator of their resilience, with the view of growth prospects. The study also aims to evaluate the financial health of the selected Indian giant paper companies and compare their performance of profitability, liquidity and efficiency levels. The research is based on secondary data that are collected through the published annual reports, industry database for the study period. The combinations of absolute and relative measures of financial performances by enabling the robust comparison across the selected 3 paper giants which is of varying scale and structure. The related framework and its analysis are being structured across the stages of the profitability, liquidity, solvency and efficiency aspects. The techniques such as Anova and descriptive statistics were employed to identify the difference in perform and identify the financial strength and weakness among the selected paper manufacturing industries. Further the tools such as correlation that used to test the significance of the variations across the firms and their relationships among the financial indicators. The study aims to brought out the insights into which the firms who are demonstrating their consistency in profitability, having solvency in strong or with the higher operational efficiency in order to shape their competitive position. The findings are clearly expected to contribute to the academic literature on the financial performance while it offers the practical implications for investors, managers of the Indian paper sector.

KEYWORDS: Financial Performance, Investment, Solvency Ratios, Indian paper Industry

INTRODUCTION

The paper industry is an oldest organized sector in India and they play a pivotal role in

the nation's economic and social development. From being a intermediate level of the knowledge distribution in the way of the books, newspapers and educational materials in order to serve as a vital input. For packaging, communication and industrial use, paper continues to be an essential product. In spite of the rapid making digital the demand for paper has remained buoyant due to its diverse applications and its intrinsic value as a sustainable product. With a steadily growing domestic market that are driven by expanding literacy, urbanization and industrialization, India ranked among the top of the paper producing nation globally. According to industry approximations, the Indian Paper and paperboard sectors are contributing significantly to GDP to encompass the writing the printing paper, packaging boards, newsprint and specially papers that cater to niche markets. The growth of e-commerce and organized retail has further widened the scope of the packaging the materials, where the paper-based products are increasingly favored over plastics due to rising the environmental concerns.

The scope of the Indian paper industry is not only the defined by domestic consumption but also by its potential in the global level market. With the sustainability that becomes a central theme for worldwide Indian companies who are all investing in eco friendly products and technologies, energy efficiency and alternative raw material such Agro- residues to reduce dependence on tradition wood pulp. This shift has positioned the industry as a responsible contribute to sustainable development. The increasing in focus on recycled paper, green packaging and biodegradable products that also highlights the opportunities which are available for Indian paper manufacturers in order to align with the global standards and trends.

The industries are also facing the notable challenges that are rising because of increase in input costs, especially for raw materials like chemicals, wood and energy that continue to put pressure on profits. There is need for continuous investment and innovation to maintain and follow the sustainable forestry practices, water intensive processes and environmental regulations. The scope of the industries lies on balance these opportunities and face the challenges in day-to-day operations. In this view, the firms only robust its strategies which are too efficient with sound financial management who able to maintain its competitiveness. With the rise in paper consumption per person in India is still below the average the domestic market that presents vast potential for expansion. At the same time the global opportunities in exports and sustainable product lines that creates the avenue for the growth of paper sector. After capitalizing these prospects, the paper industry is being collapsed to strengthen its positions both global and national level, where by making it an important sector for employment generation, economic development and with sustainable industrial progress.

PAST LITERATURES

In recent, the Indian paper industry is being widely examined for the important strategic to the industrial growth and its evolving market dynamics. Its is clearly showed in Bhattacharya (2015), in his paper as an early comprehensive analysis in order to highlights the consistent growth in India's per capita paper consumption, particularly in packaging and specialty sector. His study clearly pointed out the significant untapped potential in the domestic market, where the consumption levels are lagging behind the international averages. The findings clearly underscore the industries for expansion in future, especially in the areas that are thriving to rise literacy, retail and e-commerce growth. In the perspective of Sharma and Raghavan (2019), the focus on the structural transformation within the industry. Their research was observed a notable change from the traditional writing and printing papers to packaging solutions. They linked this shift to the growth of online retails and rising consumer demand for the packaging alternatives in sustainable growth. The work clearly demonstrated about the industry who is responding to the broader economic changes and preferences of consumer, that are offering to explore the opportunities for the firms who all are willing to diversify. Financial performance is being medium point of arguments and recent analysis.

It is clearly conducted by the Rani and Singh (2017) in conducting the research of comparative of leading Indian paper companies and it is found that the firms with different product portfolios with the stronger fundamentals in finance which were more resilient to the fluctuations of markets. The researchers emphasized the efficiency in managing the financial and optimizations of costs that were crucial is to ensure competitiveness in such a capital-intensive sector. Likewise, profitability determinants in Indian manufacturing industries including paper sector and concluded that the effective assets utilization, debt management and strong liquidity positions are the key factors of sustainable performance in Kumar's (2020) paper. There are more insights that are reflecting the impact of globalizations on the financial health of Indian paper giants. In the paper of Chandra and Patel (2021) highlighted that the increase in competition for multinational players have compelled the Indian firms to modernize the practices and strengthen the financial control systems more. The study brings out the financial strength is not just a function of profitability but also of compliance and strategic neatness. These studies were established that while the Indian Paper Industry has significant growth prospects, its sustainability depends heavily on financial efficiency, diversified product and adapting the international competition.

Though a clear research gap remains the comparative studies that systematically analyse financial footprints across multiple leading firms. Addressing this gap is essential for generating insights into how Indian paper companies balance growth opportunities with the structural and financial challenges in a rapidly changing the market.

OBJECTIVES OF THE STUDY

The present study is undertaken with the following objectives:

1. To compare the financial footprints of these companies in terms of revenue generation, profitability, asset management, liquidity, and solvency.
2. To analyse efficiency indicators that reflect the capacity of firms to utilize resources effectively in a capital-intensive sector.
3. To identify financial strengths and weaknesses across firms and highlight emerging patterns in the Indian paper industry.
4. To provide insights that may guide investors, policymakers, and industry stakeholders in understanding the competitive positioning of Indian paper giants

RESEARCH METHODOLOGY

This study adopts a quantitative, secondary-data-based approach. The research is designed as a comparative financial analysis of selected paper companies in India, excluding JK Paper and Tamil Nadu Newsprint and Papers Ltd. (TNPL), as they have already been the subject of prior research. Companies such as West Coast Paper Mills, Seshasayee Paper and Boards Ltd., Ballarpur Industries Ltd., and Andhra Paper Ltd. are considered, representing prominent players in the sector.

The study relies entirely on secondary data collected from the annual reports of the selected companies, publications of the Indian Paper Manufacturers Association (IPMA), company websites, and financial databases such as CMIE Prowess, Money control, and Capitoline. A five-year period (for example, 2020-21 to 2024-25) is selected to capture recent financial performance trends and to ensure adequate comparability across firms. Descriptive statistics such as mean, percentage change, and compound annual growth rate (CAGR) are applied to observe financial trends. Comparative analysis and graphical presentations are employed to highlight company-wise and year-wise variations. The scope of the study is confined to selected paper companies in India and to financial data available in the public domain. Non-financial factors such as management practices, environmental compliance, and policy influences are not within the study's coverage. The analysis is restricted to a five-year

period, and the results are contingent on the accuracy of secondary data sources.

ANALYSIS

Table 1
Showing Descriptives statistics of Key Financial Ratio's Selected Paper Companies in India

Descriptive Statistics

N		Minimum	Maximum	Mean	Std. Deviation
ROA	15	-.34	26.06	10.3173	7.70999
ROE	15	.15	43.40	15.5287	11.90436
Current Ratio	15	.97	3.41	2.6293	.73482
Quick Ratio	15	.44	2.89	1.8707	.65608
Debt-Equity	15	.00	.37	.0787	.10453
Interest Coverage	15	.60	162.80	50.5087	55.37942
Asset Turnover	15	.54	1.37	.9073	.23590
Inventory Turnover	15	1.71	6.97	4.2660	1.39622
Net Profit Margin	15	-.51	24.90	11.9967	7.44842
Valid N (listwise)	15				

Interpretation

The descriptive statistics in Table 1 provide an initial overview of the financial footprints of India's leading paper companies. The average Return on Assets (10.31%) and Return on Equity (15.53%) indicate moderate profitability, though the relatively high standard deviations reflect uneven efficiency and shareholder returns across firms. Liquidity positions remain sound, with mean Current (2.63) and Quick Ratios (1.87) exceeding the benchmark level of one, suggesting that most firms can comfortably meet short-term obligations. Notably, the Debt-Equity ratio is very low (0.08), highlighting the sector's reliance on equity financing and conservative borrowing practices. Interest Coverage, however, shows wide variation, with some companies enjoying exceptionally strong coverage while others remain more vulnerable. Efficiency indicators such as Asset Turnover (0.91) and Inventory Turnover (4.26) reveal moderate operational effectiveness, consistent with the capital-intensive nature of the industry. The Net Profit Margin (11.99%) further underscores profitability potential but also highlights volatility across firms. Overall, the results suggest a sector that is stable in liquidity and cautious in leverage, yet differentiated in profitability and efficiency.

Table 2
Comparative Means of Key Financial Ratios Across Selected Indian Paper Companies (2010–2024)

Report

V1		ROA	ROE	Current Ratio	Quick Ratio	Debt-Equity	Interest Coverage	Asset Turnover	Inventory Turnover	Net Profit Margin
1	Mean	9.5580	14.2480	2.9560	2.0980	.0100	84.2620	.8280	3.7020	11.8660
	N	5	5	5	5	5	5	5	5	5
	Std. Deviation	5.91768	9.75159	.44472	.37884	.01732	72.46916	.22197	1.04320	5.12762
2	Mean	10.9320	14.5900	2.1260	1.2960	.1640	17.4960	1.0400	5.2380	12.2980
	N	5	5	5	5	5	5	5	5	5

	Std. Deviation	8.13481	10.52826	.97973	.68653	.14328	14.14847	.23313	1.15521	8.03989
3	Mean	10.4620	17.7480	2.8060	2.2180	.0620	49.7680	.8540	3.8580	11.8260
	N	5	5	5	5	5	5	5	5	5
	Std. Deviation	10.27816	16.75565	.49308	.51329	.04550	49.95029	.24027	1.61664	10.15247
Total	Mean	10.3173	15.5287	2.6293	1.8707	.0787	50.5087	.9073	4.2660	11.9967
	N	15	15	15	15	15	15	15	15	15
	Std. Deviation	7.70999	11.90436	.73482	.65608	.10453	55.37942	.23590	1.39622	7.44842

Interpretation

Table 2 compares the financial ratios of Seshasayee Paper Mills (coded as 1), West Coast Paper Mills (coded as 2), and Andhra Paper Mills (coded as 3). The results reveal clear variations in profitability, liquidity, solvency, and efficiency among the firms. Seshasayee Paper shows the strongest liquidity with a Current Ratio of 2.95 and a Quick Ratio of 2.09, indicating a comfortable short-term financial cushion, though it operates with negligible leverage (Debt-Equity = 0.01). West Coast Paper, in contrast, maintains a relatively low liquidity position (Current Ratio = 2.12, Quick Ratio = 1.29) but shows higher efficiency in asset use (Asset Turnover = 1.04, Inventory Turnover = 5.23). Andhra Paper demonstrates a balanced position, with stronger equity returns (ROE = 17.75%) and a healthy Current Ratio (2.81), while managing moderate debt (Debt-Equity = 0.06).

Notably, Interest Coverage diverges sharply across companies: Seshasayee records the highest buffer (84.26), while West Coast is comparatively constrained (17.50), suggesting differences in debt-servicing comfort. Net Profit Margins remain fairly consistent across firms, ranging between 11.8% and 12.3%. Overall, Seshasayee is positioned as the liquidity leader, West Coast as the efficiency performer, and Andhra as the equity-return maximizer, reflecting differentiated financial footprints within the Indian paper sector.

Table 3

showing the Pearson Correlation Coefficients Matrix Among Financial Ratios of Paper Giants of India

Correlations

ROA			ROE	Current Ratio	Quick Ratio	Debt-Equity	Interest Coverage	Asset Turnover	Inventory Turnover	Net Profit Margin
ROA	Pearson Correlation	1	.981**	.396	.371	-.350	.582*	.864**	.296	.961**
	Sig. (2-tailed)		.000	.144	.173	.201	.023	.000	.284	.000
	N	15	15	15	15	15	15	15	15	15
ROE	Pearson Correlation	.981**	1	.411	.437	-.341	.634*	.827**	.259	.927**
	Sig. (2-tailed)	.000		.128	.103	.214	.011	.000	.351	.000
	N	15	15	15	15	15	15	15	15	15
Current	Pearson Correlation	.396	.411	1	.812**	-.772**	.528*	.086	.104	.482
	Sig. (2-tailed)				.000	.000	.023	.000	.000	.000
	N	15	15	15	15	15	15	15	15	15

Ratio	Sig. (2-tailed)	.144	.128		.000	.001	.043	.761	.712	.069
	N	15	15	15	15	15	15	15	15	15
Quick Ratio	Pearson Correlation	.371	.437	.812**	1	-.825**	.496	.066	-.230	.355
	Sig. (2-tailed)	.173	.103	.000		.000	.060	.815	.409	.194
	N	15	15	15	15	15	15	15	15	15
Debt-Equity	Pearson Correlation	-.350	-.341	-.772**	-.825**	1	-.473	-.041	.333	-.409
	Sig. (2-tailed)	.201	.214	.001	.000		.075	.884	.225	.130
	N	15	15	15	15	15	15	15	15	15
Interest Coverage	Pearson Correlation	.582*	.634*	.528*	.496	-.473	1	.348	.093	.605*
	Sig. (2-tailed)	.023	.011	.043	.060	.075		.204	.742	.017
	N	15	15	15	15	15	15	15	15	15
Asset Turnover	Pearson Correlation	.864**	.827**	.086	.066	-.041	.348	1	.449	.770**
	Sig. (2-tailed)	.000	.000	.761	.815	.884	.204		.093	.001
	N	15	15	15	15	15	15	15	15	15
Inventory Turnover	Pearson Correlation	.296	.259	.104	-.230	.333	.093	.449	1	.272
	Sig. (2-tailed)	.284	.351	.712	.409	.225	.742	.093		.327
	N	15	15	15	15	15	15	15	15	15
Net Profit Margin	Pearson Correlation	.961**	.927**	.482	.355	-.409	.605*	.770**	.272	1
	Sig. (2-tailed)	.000	.000	.069	.194	.130	.017	.001	.327	
	N	15	15	15	15	15	15	15	15	15

Interpretation of Correlation Results

The correlation analysis presented in Table X provides insights into the interrelationships among key financial ratios of the firm during the study period. A very strong and positive correlation was observed between ROA and ROE ($r = 0.981$, $p < 0.01$), confirming the logical association that both indicators capture profitability performance, although from different perspectives. Similarly, ROA and Net Profit Margin ($r = 0.961$, $p < 0.01$) exhibited a near- perfect relationship, indicating that profitability at the asset level is directly aligned with net earnings generated by sales. This strong linkage underscores the robustness of profitability measures within the firm.

Efficiency indicators also demonstrated a significant association with profitability. Asset Turnover was highly correlated with ROA ($r = 0.864$, $p < 0.01$) and ROE ($r = 0.827$, $p < 0.01$), implying that improved utilization of assets translates directly into enhanced returns. Moreover, Net Profit Margin also maintained a strong positive correlation with Asset Turnover ($r = 0.770$,

$p < 0.01$), highlighting that higher sales efficiency contributes meaningfully to profit generation.

Liquidity measures provided further insights. The Current Ratio and Quick Ratio were strongly correlated ($r = 0.812$, $p < 0.01$), confirming their overlapping role in capturing short-term solvency. However, both ratios were negatively correlated with Debt-Equity ($r = -0.772$ and $r = -0.825$, respectively; $p < 0.01$), suggesting that firms maintaining stronger liquidity tend to rely less on external borrowings. This inverse relationship reinforces the trade-off between liquidity management and financial leverage. The coverage dimension also revealed notable relationships. Interest Coverage Ratio was positively associated with ROE ($r = 0.634$, $p < 0.05$), ROA ($r = 0.582$, $p < 0.05$), Current Ratio ($r = 0.528$, $p < 0.05$), and Net Profit Margin ($r = 0.605$, $p < 0.05$). These results indicate that firms with stronger earnings capacity relative to interest obligations also tend to display higher profitability, better liquidity, and stronger margins.

In contrast, Inventory Turnover did not show significant relationships with profitability or liquidity indicators ($p > 0.05$), reflecting that inventory management efficiency was not a dominant driver of financial performance in this context.

The results of the above analysis confirms that the profitability is strongly influenced by the asset efficiency and strength of profits, while the liquidity ratios are indirectly linked with leverage. These findings empirically shows the evidence that the profitability in the firm stems out from the efficient asset utilization, practical liquidity management with reduced dependence on the debt financing.

RESULTS AND DISCUSSION

The financial ratio analysis of leading paper manufacturing companies in India for the period of 2021-2025 with the variations in profitability, leverage, liquidity with efficiency. The descriptive statistics are highlighted in moderate but in fluctuating profitability, as reflected in ROA and ROE, on compare to show clear differences among the companies, with some consistently delivering superior shareholder returns. Asset turnover ratios were indicated the disparities in efficiency and correlation results confirmed a strong positive association between ROA and Asset Turnover at $r > 0.80$, $p < 0.01$, emphasizing that the firms with the better utilization of assets achieved with higher profitability. Liquidity ratios are displayed significant variation across firms, with the quick ratio and current ratio strongly correlated with the value of $r = 0.81$, $p < 0.01$ and both are negatively associated with the Debt Equity, suggesting that firms are maintaining stronger liquidity profiles trusted less on debt financing. While looking into the interest coverage ratio, there is positive correlation with profitability and liquidity measures and highlighting the earnings capacity relatively to interest requirement that contributes to overall financial stability. In divergence, the Inventory turnover did not show the significant associations with the liquidity or profitability by indicting that the inventory management was not an important factor of the financial performance. The financial performance of the Indian paper companies is largely surrounded and framed by the asset efficiency, judicious liquidity management and controlled leverage at the same time excessive dependence on the debt tends to compress the profitability. The results clearly underscore the sustainable performance in the industry that root out from a balance between the operational efficiency and cautious financial structuring.

SUGGESTIONS

In India the focus on improving asset utilization through modernization of machinery, process automation and better capacity management that can directly enhance profitability. Weak liquidity firms need to have strengthened working capital policies and by reducing over relying on short term borrowing in order to improving solvency. Operating with high leverage should consider restructuring of debt and diversifying the funding resources to reduce the financial risk, by safeguarding the shareholder returns. However, the inventory

turnover did not emerge as a significant performance driver, firms should adopt slimdown the inventory practices to minimize carrying costs without more dependence on the emphasizing the stock rotation. At the end the industrywide competitiveness shall also improve where the companies should integrate financial risk management with operational strategies, ensuring the efficiency gains are complemented by an unchanging capital structure and proper liquidity management.

CONCLUSION

The financial ratio analysis of Indian paper manufacturing industries for the period of 2021- 2025, by underscoring the multifaceted nature of company's performance in this sector. The profitability indicators such as ROA and ROE vary across firms significantly in the view of efficiency in the asset utilization emerging as a primary factor of returns. Profitability, asset turnover and the net margin were strong positive correlations. This is demonstrating the companies who shall leverage their assets more effectively to achieve the superior financial outcomes. Current and Quick Ratio in case of liquidity was closely interrelated and inversely linked with the leverage of the prominence that firms with robust liquidity profiles are low reliant on debt financing. Higher the level of debt in contrast are negatively affected profitability and weakened solvency, strengthening its position of cautious financial structuring. Inventory turnover showed limited influence, by suggesting that operational efficiency in the paper industry that lies more in asset and capital management than in stock.

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