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DO MERGERS PAY OFF? EVIDENCE FROM THE INDIAN MANUFACTURING SECTOR

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Abstract: *This study analyzes the financial performance of four Indian manufacturing firms involved in mergers and acquisitions (M&A) in 2017. Using data from 2010–2016 (pre-M&A) and 2018–2024 (post-M&A), it examines changes in liquidity, profitability, solvency, and efficiency. Paired t-tests reveal significant post-M&A improvements in quick ratio, ROE, ROCE, and debtor turnover, indicating gains in liquidity and profitability. However, changes in current ratio, inventory turnover, and solvency were not significant. The findings suggest M&A moderately enhanced short-term financial management and shareholder returns, offering valuable insights for investors and policymakers.*

Keywords: Mergers and Acquisitions, Financial Performance, Indian Manufacturing Sector, Liquidity Ratios, Profitability Analysis

Introduction

The 21st-century global economic landscape, shaped by rapid globalization and technological disruption, has had a profound impact on the Indian manufacturing sector. In response to intense competition and shifting market dynamics, Indian manufacturing firms have increasingly turned to mergers and acquisitions (M&As) as a strategic tool to achieve faster growth and long-term sustainability. These transactions offer a pathway to inorganic growth by enabling companies to combine resources, reduce costs, and enhance overall efficiency. Mergers typically bring together two or more firms into a single entity, while acquisitions involve one company taking control of another—both aimed at achieving business synergies, expanding market presence, and strengthening product offerings. The Indian manufacturing sector, which includes industries such as automobiles, textiles, pharmaceuticals, and machinery, provides fertile ground for such consolidation. Government initiatives like "Make in India" and the implementation of GST have further fueled M&A activity by improving the regulatory environment and making India more attractive to investors. These developments highlight the critical role of M&As in transforming Indian manufacturing into a globally competitive powerhouse.

Review of literature

Several studies offer mixed findings on the financial impact of mergers and acquisitions (M&A). Kyalo Faith Ndunge and Matanda Joshua (2023) concluded that asset growth and synergy from M&A positively influence the financial performance of Kenyan insurance firms. Puja Aggarwal and Sonia Garg (2022) found that M&A improved profitability and liquidity over five years, especially in the service sector, but had no significant effect on solvency. Alhassan Musah et al. (2020) reported a negative impact on net profit margins and inconclusive effects on ROA and ROE in Ghanaian banks. Similarly, Debi Prasad Satapathy and Subhendu Mishra (2020) observed a decline in profitability and cash flow post-merger for Indian firms. Swati Saxena et al. (2020) noted initial financial improvement post-merger, followed by a decline due to the pandemic. Saefudin Zuhri et al. (2020) found no significant differences in ROE and debt-equity ratios before and after M&A, with pre-M&A figures often performing better.

Research Gap of the Study

Several studies have analyzed the financial performance before and after M&A deals, but there is limited research specifically focused on M&A activity within the Indian manufacturing sector. This study seeks to bridge that gap by evaluating key financial indicators—liquidity, profitability, solvency, and turnover ratios—to provide a comprehensive assessment of the financial impact of mergers and acquisitions in this sector.

Statement of the Problem

While M&A activities in India have been widely studied across sectors, limited research has focused specifically on the manufacturing sector, despite its prominence in M&A transactions. Most existing studies emphasize services, especially banking, with insufficient attention to the financial performance and shareholder value outcomes in manufacturing. This study aims to fill that gap by offering a comprehensive analysis that incorporates financial indicators and relevant regulatory frameworks—such as SEBI regulations, the 1991 liberalization policy, and the Income Tax Act—to better understand the factors influencing M&A success in the Indian manufacturing context.

Objectives of the Study

1. To assess the financial performance of manufacturing firms before and after M&A deals.
2. To identify significant changes in liquidity, profitability, solvency, and efficiency post-M&A.

Hypotheses of the Study

The hypotheses focus on the financial performance of before and after M&A activities

H_{01}: There is no significant difference between the before and after liquidity positions of selected M&A deals.
H_{02}: There is no significant difference between the before and after-profitability position of selected M&A deals.
H_{03}: There is no significant difference between the before and after-solvency position of selected M&A deals.
H_{04}: There is no significant difference between the before and after-efficiency position of selected M&A deals.

Research Methodology

This study employs a quantitative research design to assess the financial performance impact of mergers and acquisitions (M&A) in the Indian manufacturing sector. The analysis focuses on four Indian manufacturing companies that completed M&A transactions in the year 2017. To evaluate performance changes, financial data spanning seven years prior to the merger (2010–2016) and seven years following the merger (2018–2024) were collected, offering a comprehensive pre- and post-M&A comparison. All selected firms are listed on the Bombay Stock Exchange (BSE), ensuring access to reliable and audited financial disclosures.Data utilized in the study is primarily drawn from secondary sources. The CMIE ProwessIQ database served as the principal data source, complemented by information obtained from BSE and SEBI disclosures, company annual reports, industry publications, and national newspaper archives.

The present study focuses on four Indian manufacturing companies that underwent mergers or acquisitions in the year 2017—

1. JSW Steel Ltd.
2. India Cements Ltd.
3. Gufic Biosciences Ltd.
4. Godawari Power
5. & Ispat Ltd.

These companies represent diverse segments of the manufacturing sector, including steel, cement, pharmaceuticals, and power.

Analytical Tools and Techniques:

The study emphasizes four major financial dimensions: liquidity, profitability, solvency, and efficiency, using key financial ratios as performance indicators. The study uses descriptive statistics, namely mean, standard deviation (SD), Coefficient of variation (CV). To assess the statistical significance of the differences in financial performance before and after the M&A events, paired sample t-tests were conducted.The collected data for the study is graphically presented, adequately tabulated, suitably analyzed, and meaningfully interpreted.

Empirical Analysis:

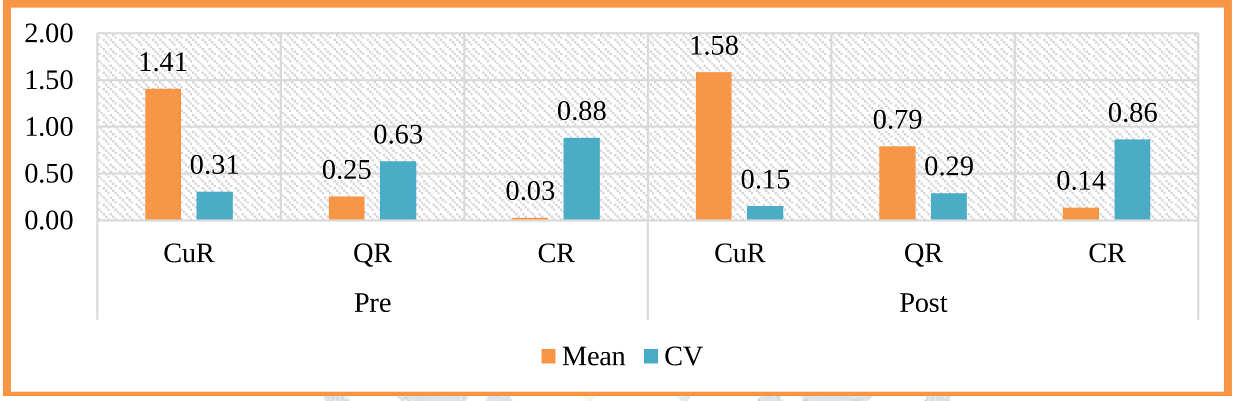
Table No.1: Before and After Liquidity Position of the M&A Deals During 2017

Pre-M&A Deals during 2017 (4 M&A Deals)			
Year	**Current Ratio**	**Quick Ratio**	**Cash Ratio**
2010	1.3575	0.1175	0.0200
2011	1.8750	0.1498	0.0645
2012	1.8350	0.1210	0.0398
2013	1.8198	0.1223	0.0208
2014	1.0198	0.4430	0.0000
2015	1.0078	0.4560	0.0000
2016	0.9235	0.3665	0.0435
Mean	**1.4055**	**0.2537**	**0.0269**
SD	**0.4317**	**0.1601**	**0.0238**
CV	**0.3072**	**0.6309**	**0.8823**

Post-M&A Deals during 2017 (4 M&A Deals)			
2018	1.4100	0.5893	0.0475
2019	1.3898	0.5630	0.0350
2020	1.3720	0.5885	0.0334
2021	1.5758	0.7738	0.0877
2022	1.5103	0.8368	0.1605
2023	1.8275	1.1273	0.2816
2024	1.9815	1.0483	0.3122
Mean	**1.5810**	**0.7895**	**0.1368**
SD	**0.2365**	**0.2292**	**0.1181**
CV	**0.1496**	**0.2904**	**0.8634**
t -Stat	**-0.7454**	**-11.1497**	**-2.2653**
P-value of paired t- Test	**0.4842**	**0.0000**	**0.0641**

Source:*Authors compilation*

Figure No.1: Graphical representation of the Before and After Liquidity Position of the M&A Deals During 2017



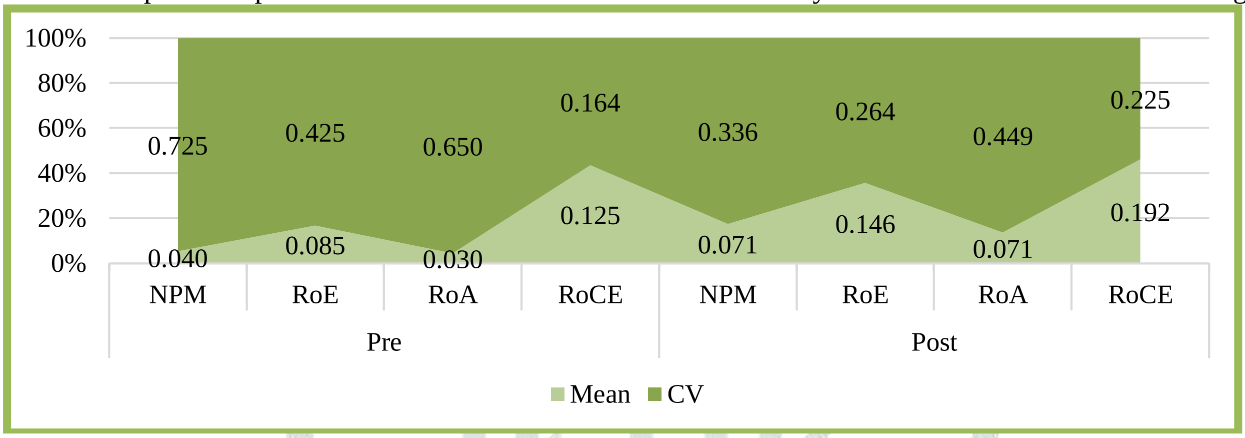
The **Current Ratio** exhibited a slight increase, with the pre-M&A mean at 1.4055 and the post-M&A mean at 1.5810. This was accompanied by reduced variability (CV from 0.3072 to 0.1496), but the change was not statistically significant, as indicated by the p-value of 0.4842. The **Quick Ratio**, however, showed a significant improvement, rising from a pre-M&A mean of 0.2537 to 0.7895 post-M&A. This enhancement, supported by a substantial reduction in variability (CV 0.6309 to 0.2904), is statistically significant with a p-value of 0.0000, highlighting better short-term liquidity management. The **Cash Ratio** also increased, from a pre-M&A mean of 0.0269 to 0.1368 post-M&A. Despite the improvement, the post-M&A period showed higher variability (CV of 0.8823 to 0.8634), and the change was not statistically significant.

Table No.2: Before and After Profitability Position of M&A Deals During 2017

Pre-M&A Deals during 2017 (4 M&A Deals)				
Year	**NPM (%)**	**ROE (%)**	**ROA (%)**	**ROCE (%)**
2010	0.0867	0.1244	0.0587	0.1419
2011	0.0450	0.0785	0.0295	0.0960
2012	0.0518	0.1028	0.0403	0.1373
2013	0.0598	0.1353	0.0471	0.1337
2014	0.0146	0.0484	0.0102	0.1021
2015	0.0139	0.0563	0.0126	0.1176
2016	0.0086	0.0500	0.0111	0.1494
Mean	**0.0400**	**0.0851**	**0.0299**	**0.1254**
SD	**0.0290**	**0.0361**	**0.0195**	**0.0205**
CV	**0.7248**	**0.4246**	**0.6504**	**0.1635**
Post-M&A Deals during 2017 (4 M&A Deals)				
2018	0.0516	0.1546	0.0461	0.2123
2019	0.0524	0.1436	0.0467	0.2070
2020	0.0459	0.1121	0.0389	0.1557
2021	0.0881	0.1683	0.0884	0.2079
2022	0.1127	0.2171	0.1303	0.2637
2023	0.0700	0.1238	0.0731	0.1495
2024	0.0756	0.1048	0.0722	0.1470
Mean	**0.0709**	**0.1463**	**0.0708**	**0.1918**
SD	**0.0238**	**0.0387**	**0.0318**	**0.0432**
CV	**0.3358**	**0.2642**	**0.4493**	**0.2250**
t -Stat	**-1.7736**	**-3.1268**	**-2.3909**	**-3.0944**
P-value of paired t- Test	**0.1265**	**0.0204**	**0.0540**	**0.0213**

Source:*Authors compilation*

Figure No. 2: Graphical Representation of the Before and After Profitability Position of the M&A Deals During 2017



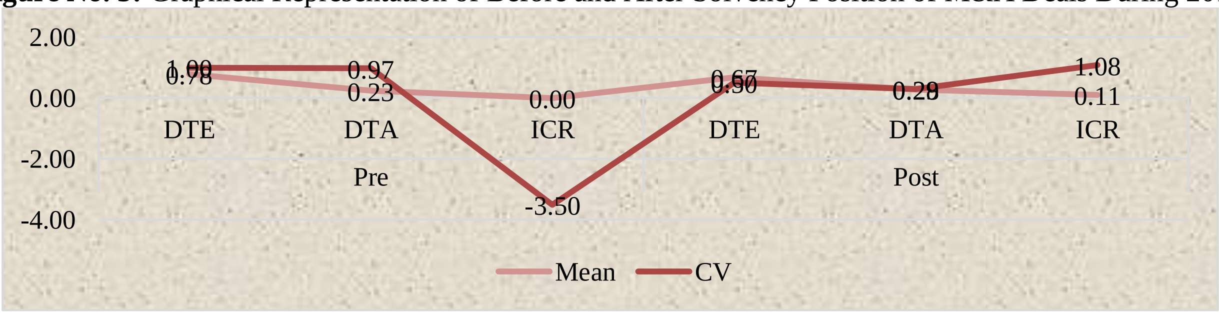
Pre-M&A of the **NPM** averaged 4.00%, whereas post-M&A, the average rose to 7.09%, and stability improved significantly. Despite these positive changes, the P-value indicates the improvement is not statistically significant. The **ROE** averaged 8.51% for pre-M&A, while ROE increased to 14.63% for post-M&A, and they are consistent. The **ROA** improved from an average of 2.99% pre-M&A to 7.08% post-M&A. Stability also improved. However, with a borderline P-value of 0.0540, this increase is insignificant. However, the **ROCE** increased notably from 12.54% pre M&A to 19.18% post-M&A, indicating consistently improved efficiency in capital utilization. There is a statistically significant difference between before and after ROA and ROCE of M&A deals, as evidenced by P-values of 0.0204 and 0.0213.

Table No. 3: Before and After Solvency Position of M&A Deals During 2017

Pre-M&A Deals during 2017 (4 Companies)			
Year	**Debt to Equity**	**Debt to Asset**	**Interest Coverage**
2010	0.1870	0.0825	0.0083
2011	0.2081	0.0744	0.0066
2012	0.2150	0.0724	0.0046
2013	0.3548	0.0900	0.0057
2014	2.2286	0.6630	-0.0166
2015	0.8893	0.2582	-0.0167
2016	1.3845	0.3758	-0.0163
Mean	**0.7810**	**0.2309**	**-0.0035**
SD	**0.7804**	**0.2236**	**0.0123**
CV	**0.9992**	**0.9684**	**-3.5030**
Post-M&A Deals during 2017 (4 Companies)			
2018	1.1398	0.3572	0.0298
2019	0.9979	0.3636	0.0316
2020	0.9187	0.3589	0.0259
2021	0.4896	0.2616	0.0458
2022	0.3506	0.1899	0.3317
2023	0.4697	0.2333	0.1824
2024	0.3431	0.1869	0.0959
Mean	**0.6728**	**0.2788**	**0.1061**
SD	**0.3346**	**0.0801**	**0.1142**
CV	**0.4973**	**0.2872**	**1.0758**
t -Stat	**0.2701**	**-0.4326**	**-2.3360**
P-value of paired t- Test	**0.7962**	**0.6804**	**0.0582**

Sources:_Authors compilation_

Figure No. 3: Graphical Representation of Before and After Solvency Position of M&A Deals During 2017



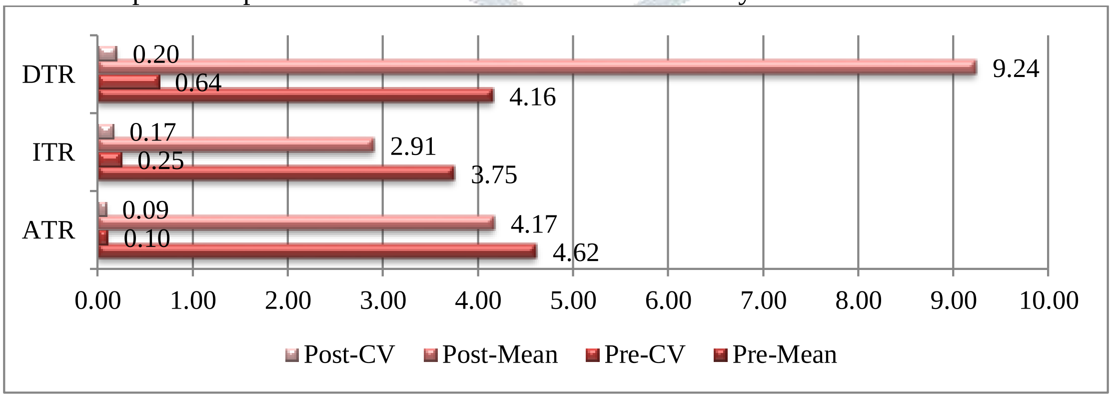
The mean **debt-to-equity** ratio decreased from 0.7810 (pre-M&A) to 0.6728 (post-M&A), suggesting a reduction in leverage after the mergers. The mean **debt-to-asset** ratio increased slightly from 0.2309 to 0.2788, implying that assets were being financed with slightly more debt post-merger. The most notable shift was in **interest coverage**, which improved significantly from a negative mean (-0.0035) pre-M&A to 0.1061 post-M&A, suggesting a stronger ability to meet interest obligations. They are more consistent. As it is evidenced from the p value of all the ratios, there is no significant difference between pre and post M&A deals during the study period.

Table No. 4: Before and After Efficiency Position of M&A Deals During 2017

Pre-M&A Deals during 2017 (4 M&A)			
Year	**ATR**	**ITR**	**DTR**
2010	4.4135	4.3500	1.2400
2011	4.7483	2.9200	1.5400
2012	3.9855	4.4500	2.6300
2013	4.1371	4.5600	2.9275
2014	5.3238	4.6303	6.5150
2015	5.0390	2.5738	6.7100
2016	4.6629	2.7955	7.5575
Mean	**4.6157**	**3.7542**	**4.1600**
SD	**0.4774**	**0.9367**	**2.6721**
CV	**0.1034**	**0.2495**	**0.6423**
Post-M&A Deals during 2017 (4 M&A)			
2018	4.2444	2.8850	8.4600
2019	4.3037	2.7200	7.8575
2020	4.5459	2.4000	7.4350
2021	4.1501	2.5425	8.5175
2022	3.4573	3.0000	8.7050
2023	4.0041	2.9150	11.8825
2024	4.5163	3.8800	11.8375
Mean	**4.1745**	**2.9061**	**9.2421**
SD	**0.3698**	**0.4797**	**1.8401**
CV	**0.0886**	**0.1651**	**0.1991**
t -Stat	**1.4756**	**1.7953**	**-8.3800**
P-value of paired t- Test	**0.1905**	**0.1228**	**0.0002**

Sources: *Authors compilation*

Figure No. 4: Graphical Representation of Before and After Efficiency Position of M&A Deals During 2017



The table evaluates the efficiency position before and after M&A deals in 2017. Mean **ATR** declined slightly from 4.6157 (pre-M&A) to 4.1745 (post-M&A), indicating marginal drop in the efficiency of asset utilization. Mean **inventory turnover** fell from 3.7542 to 2.9061, implying reduced efficiency in inventory management. However, the **DTR** improved significantly, increasing from 4.1600 to 9.2421, reflecting enhanced receivables collection efficiency. They are consistent in nature. There is significant difference between before and after M&A deals of debtor turnover ratios as it is evidence from the p value of paired t statistic and rest of them are no significant difference.

Major findings of the study

Post-merger analysis reveals a mixed financial performance. Liquidity improved with a moderate rise in the current ratio from 1.4055 to 1.5810 (not statistically significant), and a significant increase in the quick ratio from 0.2537 to 0.7895 ($p = 0.0000$), while the cash ratio rose from 0.0269 to 0.1368 but remained statistically insignificant. Profitability indicators showed positive trends: return on equity improved from 8.51% to 14.63% ($p = 0.0204$) and ROCE from 12.54% to 19.18% ($p = 0.0213$), both statistically significant; net profit margin increased from 4.00% to 7.09% ($p = 0.1265$) and ROA from 2.99% to 7.08% ($p = 0.0540$), but these were not statistically significant. Leverage metrics showed a slight decline in the debt-to-equity ratio from 0.7810 to 0.6728 ($p = 0.7962$) and a rise in debt-to-asset ratio from 0.2309 to 0.2788 (not significant), while interest coverage ratio shifted from –0.0035 to 0.1061, indicating improved debt servicing, though marginally insignificant. In terms of operational efficiency, the asset turnover ratio declined from 4.6157 to 4.1745 and inventory turnover from 3.75 to 2.91 (both insignificant), while debtor turnover ratio significantly improved from 4.16 to 9.24 ($p = 0.0002$), reflecting stronger credit and cash flow management.

Suggestions

1. Investors can consider investing in M&A companies as the quick ratio significantly improved, indicating stronger short-term liquidity management post-merger.
2. The post-M&A increase in ROE and ROCE suggests better profitability and capital efficiency, making these companies a favourable option for investment.
3. Despite improvements, current ratio and cash ratio changes were not statistically significant, so investors should evaluate other liquidity metrics before investing.
4. As inventory and asset turnover declined post-M&A, investors should be cautious and assess operational efficiency before making investment decisions.
5. The interest coverage ratio turned positive, showing better debt servicing ability, which adds a level of confidence for potential investors.
6. Given the reduced variability and more stable financial performance after M&A, investors may consider these firms for medium to long-term investment.

Conclusion

The analysis of the 2017 M&A deals reveals that while several financial metrics improved post-merger—especially quick ratio, ROE, ROCE, and debtor turnover—most of the observed differences were not statistically significant. The improvements in short-term liquidity and capital efficiency reflect better internal financial management post-M&A. The significant rise in debtor turnover ratio further indicates enhanced operational efficiency in managing receivables. However, the minor or statistically insignificant changes in current ratio, solvency ratios, and inventory turnover suggest that the impact of M&A was not uniformly strong across all financial aspects. Overall, the M&A deals of 2017 delivered moderate to substantial financial benefits, especially in areas related to liquidity optimization and profitability enhancement.

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