

7. Key findings and observations:

The paired t-test is also applied to test the significance of the formulated statistical hypotheses to offer findings and implications of this research study as brought out below:

7.1 Operational Synergy Pre and Post M&A:

Comparative mean pre-merger and post-merger Operational Synergy Parameters and results from t-tests for statistical significance have been summarized in Table-7.1.

Table-7.1

Mean pre-merger and post-merger Operational Synergy Parameters

Operational Synergy Parameters	Pre-merger	Post-merger	t (0.05 significance)	t-critical (two tail)
Gross Profit Margin (GPM)	16.84	18.2	2.156	2.447
Net Profit Margin (NPM)	4.92	7.25	2.148	2.447
Return on Capital Employed (ROCE)	14.97	24.43	2.302	2.447
COP-Sales Ratio	90.26	85.50	-1.810	2.447

The comparison of the pre-merger and post-merger Operational Synergy Parameters for the sample set of M&A showed that there was a slight decline in the cost savings as reflected in the Cost of Production to Sales ratio (COP/ Sales) pre and post deal (90.26 % to 85.50%) from the pre-merger period to the post-merger period. The declines are however, not statistically significant (t-statistic values of -1.810 is less than t-critical value of 2.447). However, there was a marginal increase in other Operational Synergy Parameters like GPM, NPM and ROCE which were also found statistically insignificant as indicated by t-value (t-statistic values is less than t-critical value).

Based on the above results, the Null Hypothesis H0: “M&A do not result significant difference between Pre and Post merger Operational Synergy Parameters of the companies in Indian Petroleum Industry” cannot be rejected.

7.2 Financial Synergy Pre and Post M&A:

Comparative mean pre-merger and post-merger Financial Synergy Parameters and results from tests for statistical significance have been summarized in Table-7.2.

Table-7.2

Mean pre-merger and post-merger Financial Synergy Parameters

Financial Synergy Parameters	Pre-merger	Post-merger	t (0.05 significance)	t-critical (two tail)
Operating Cash Flows (OCF)	3004.77	4731.21	2.341	2.447
Debt –Equity ratio (D/E)	2.51	1.12	-1.244	2.447

The comparison of the pre-merger and post-merger Financial Synergy Parameters for the sample set of M&A showed a marginal increase in the OCF (3004.77 to 4731.21). But the increases are not statistically significant, as indicated by the corresponding t-value of 2.341.

However, there seemed to be a marginal leverage effect, as seen from the debt-equity ratios before and after the mergers (1.12 vs. 2.51), but not statistically significant, as indicated by the t-value of -1.244.

Based on the above results, the Null Hypothesis H0: “M&A do not result significant difference between Pre and Post merger Financial Synergy Parameters of the companies in Indian Petroleum Industry” cannot be rejected.

7.3 Shareholder's return and shareholder's wealth Pre and Post M&A:

Comparative mean pre-merger and post-merger Shareholder's return and shareholder's wealth Parameters and results from tests for statistical significance have been summarized in Table-7.3.

Table-7.3

Mean pre-merger and post-merger Shareholder's return and shareholder's wealth Parameters

Shareholder's return and shareholder's wealth Parameters	Pre-merger	Post-merger	t (0.05 significance)	t-critical (two tail)
Wealth Added Index (WAI)	-1570.93	4740.95	1.512	2.447
Economic Value Added (EVA)	335.57	1831.23	1.882	2.447
Future Growth Value (FGV)	-13373.7	24300	1.734	2.447

The comparison of the pre-merger and post-merger Shareholder's return and shareholder's wealth Parameters for the sample set of M&A showed a significant increase in the WAI, EVA as well as FGV but the increases are not statistically significant, as indicated by the corresponding low t-values of 1.512, 1.882 and 1.734 respectively in comparison to t-critical value of 2.447.

Based on the above results, the Null Hypothesis H₀: "M&A do not result significant difference between Pre and Post merger shareholder's return and share-holder's wealth parameters of the companies in Indian Petroleum Industry" cannot be rejected.

