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Impact of M&A transactions in India: Pre- and Post-CovidScenario Analysis

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Abstract:
Corporate restructuring andbusiness combination are the strategic decisions leading to the maximization of a organizational growth by enhancing its production and marketing operations. In recent times mergers and acquisitions have become popular means to achieving enhanced competition, breaking trade barriers, free flow of capital across countries and globalization of business. This paper attempts to investigate the trends in mergers and acquisition (M&A) activity of Indian listed companies on Bombay Stock Exchange that engaged in the M&A process. The theoretical implications of disturbance theory causing a merger wave is identified in the initial research and the latter determines the synergistic benefit of an acquisition of the acquired firm through an analysis of financial and operating performance of the organization. In addition, our statistical analysis and empirical findings show a great improvement in profitability margins and results are modeled after an existing literature of analyzing financial and operating performance of the firm using financial ratios.
Keywords:*Merger and Acquisition, Financial Performance, Operating Performance, Return on Equity, Synergy, Liquidity*

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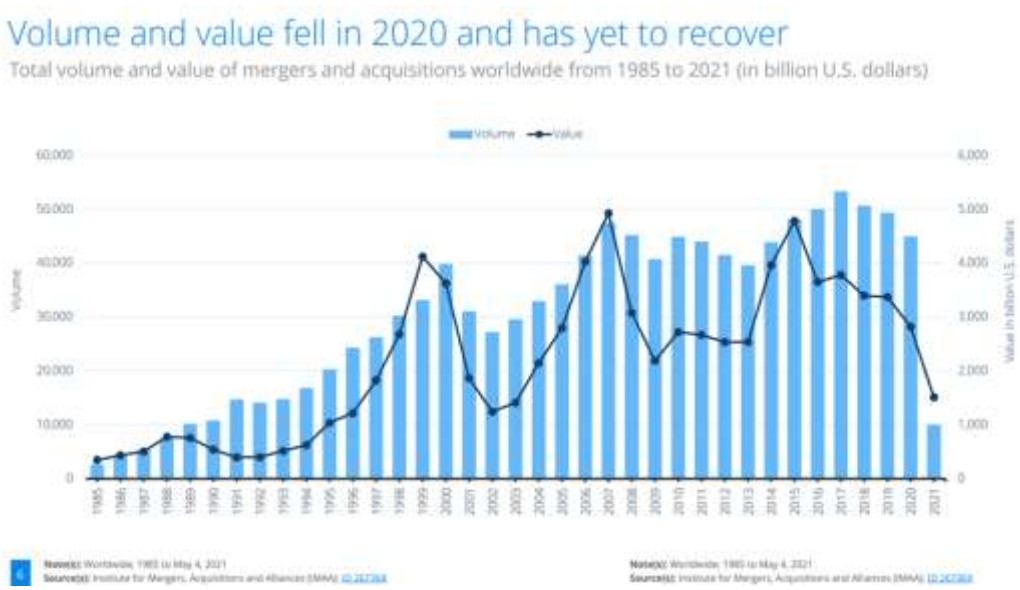
I. Introduction

Throughout the world, M&A activity collapsed, and the global economic growth came to a halt in 2020 and the beginning of 2021,and it had taken a long time for the trend to pick up. Businesses were less eager to invest in pricey M&A because of the coronavirus pandemic's uncertainties and ensuing stay-at-home directives. The coronavirus pandemic and the subsequent economic downturn have been the main causes that has led to the decline in investor confidence, however some industries still drew a lot of M&A interest. The pandemic also had a direct impact on some of the industries where significant M&A transactions were recorded during this time, but pre-pandemic tendencies continued in other industries. This has led to a decline in both deal volume and size globally. Deal volume fell by 7 percent, and deal value declined by 16 percent globally in 2020. However, there were regional differences.

With increased spending from the local government, India's health care market has been forecasted to be increased with a CAGR of 16-17% and M&A activity in this industry has become a hotbed for deals during the pandemic. The global immunization program's success and whether the disease can be totally eradicated will determine how long this trend lasts. Companies that provide software to support remote working, distance learning, or contactless transactions were popular M&A targets. These fields have been expanding recently, but the lockdowns, stay-at-home directives, and the urgent need for such innovation on a wide scale during the epidemic have hastened their growth.



Interestingly, there was a shift away from more conventional targets like industrial or healthcare enterprises and toward targets that were technology focused. This is consistent with the pattern of tech businesses doing very well during pandemics, which is probably because there is a greater demand for technology to support mass distant working and contactless interactions. Additionally, the pandemic hampered industrial activity and disrupted the supply chain. Companies that manufacture semiconductors are important suppliers of chips for anything from laptops to automobiles. Since early 2020, crypto mining has sharply increased, which has led to a global chip shortage. In 2020, two of the biggest semiconductor makers, AMD and Nvidia, both announced significant acquisitions.

In 2020, the average deal size in North America, the global giant, decreased by 50% and accounted for 42% of all global deal value, although it still ranked first in the region's historical trends and countries of growth. Asia-Pacific accounted for 22 percent of global deal volume in 2020. Deal volume grew the most in South Africa and Cambodia. Deal value fell the most in South Korea and Turkey.

Meanwhile, the Indian scenario showcasing the value of strategic deals in India as of 2021 is shown below. Deals involving mergers and acquisitions totaled USD 49 billion. The overall value of PE and M&A deals remained constant despite the effects of the COVID-19 crisis.

The government has been actively advocating policies in favor of companies that harness the wealth-generating potential of competitive markets, according to reports from an economic study 2019-20. India moved up in the World Bank's Doing Business rankings, moving 142nd place in 2014 to 63rd place in 2019 with a focus on ease of doing business. India's economic performance in terms of GDP growth was anticipated to increase by 6.0 to 6.5 percent in 2020-21 as a result of the changes implemented to increase investment, consumption, and exports. It saw a fiscal improvement with a discernible increase in non-tax revenue and gross GST monthly collections that five times in 2019-20 exceeded Rs. 1 lakh crore (Economic Survey, 2019-20).

1. Rationale and Need of the Study

Indian firms are increasingly accepting of mergers and acquisitions (M&A) as a crucial instrument as a part of business strategy because as per the literature, M&As have been used as an instrument for inorganic growth in the short-term. Businesses in the field of information technology, business process outsourcing, and communications employ M&A to become more resilient, increase their client base, outperform their rivals, or enter new markets. They are also used in tangible ways to access markets through well-known brands, build expertise, gain market share, get rid of rivals and lower tax obligations. One characteristic that has been amply illustrated in this research is of setting off the losses incurred by an organization against the income of another to realize their transformational goals. CEOs may plan to re-adjust their global operations and supply chains with a purpose to reduce logistics costs and increase resilience.

As most of the M&As fail to generate shareholder returns, a quiet opposite phenomenon has been observed Indian businesses who have made it to big headlines though acquisitions across airlines, e-commerce grocery, education technology (ed-tech), ad financial services by some of the common names head in-house, like Tatas, Piramal, Byju's, Zee Entertainment. Following this, the value of deals reached around approximately 97 billion INR in India. Although the positive shareholder's return is a good measure of a deal's success, the transactions are most likely to take place keeping the focus on long-term goals.

2. Aim of the Study

Company's expectation on acquiring another entity and expecting growth must be capable of evaluating the right target, seeking talent of functional proficiency, with careful analysis on external economic forces, and backed up with a fully integrated plan of action for pre-merger integration in place. The big shift from conventional asset-heavy growth model to asset-light, with owning capital in the form of software, patentes, brands, or client relationships has helped the businesses protect themselves against macroeconomic turbulence and economic stagnation. The entire e-commerce industry is unique in being asset-light where businesses are investing in technology to reduce the need for an asset-heavy model.

This paper aims at examining the trends occurring in the mergers and acquisition activity in the due course of pandemic and relate to the disturbance theory (merger wave) proposed by Gort (1969) and Trautwein (1990). It is to analyze the target companies' financial standing and identify the sources of real economic gains. The research methodology and hypothesis are derived from an investigation conducted by P.K. Jain, Rani. N. & S.S. Yadav (2015) to measure the effect of takeover on the performance of target firms.

3. Review of Literature

As a result of the global pandemic outbreak of the coronavirus disease, the business environment has been rapidly transforming with evolving technology. The number of mergers and acquisition (M&A) transactions has surged significantly in both developed and developing nations. Since growth is an inevitable part of organizational survival, a firm strives to create wealth through innovation, increase market share and remain profitable despite all odds. This can be achieved by both internally and externally of which the internal means are by expanding its operations and scaling its capabilities through establishment of new units or by entering new markets. The review of literature has been segregated into 3 parts: The Merger Wave, The Positive M&A Transactions and No/Negative M&A Transactions.

4.1 Merger Wave: Disturbance Theory

Gort (1969), explains the correlation between the surge of M&A wave and the current economic condition whereas Trautwein (1990) takes a broader point of view towards explaining acquisition activity through the taxonomy of acquisition motives classified into seven different theories of which acquisition as a macroeconomic phenomenon was the disturbance theory. Boateng,A., Naraidoo, R., & Uddin, M. (2011) analyzed a quarterly data set of macroeconomic influences on cross border M&As wherein their findings were also in line with the disturbance theory. Reddy, K.S., V.K. Agarwal. R (2014) found out that the investments and international mergers and acquisition (M&A) transactions were unfavorably impacted by the global financial crisis and local economic unrest which supported the economic disturbance theory.

4.2 Positive

Phase 1: 1990s

Notable studies have been conducted on measuring improvement in post-merger and acquisition of the company that was initially examined by Krishna G. Palepu, Paul M. Healy; Richard S. Ruback (1992) whose findings indicated a significant enhancement in post-merger transactions with entities that overlap. Several extended and similar studies have been done on the synergistic motive of merger and acquisition activity of the companies seeking growth. Jeannette A. Switzer (1996), studied and presented additional support to Healy., (1992) by an extended study on realization of synergistic benefits and reported that for a broad sample of combinations, there was a notable improvement in the operating performance of the merged companies.

Phase 2: 2000s

Ghosh, A., & Jain P.C (2000) provided strong evidence of combined firms following mergers which were increasing statistically and economically. Manson, S., Powerll, R., Stark, A. W., & Thomas H.M (2000), Pawaskar, V., (2001), Heron. R, & Lie, E. (2002), Bruner, R.F. (2002) have examined and presented similar evidence on positive improvement in financial performance post-merger. Ramaswamy & Waegelein, (2003) showed post-merger performance in long-term and dissimilar industries as well. Rahman, R.A., & Limmack, R.J. (2004) have examined takeovers of Malaysian private companies entering into voluntary combinations of acquisitions and presented findings stating a significant improvement following acquisitions. Kruse, T.A., Park, H.Y., Park, K., & Suzuki, K. (2007) have also discovered evidence that improvements were considerably greater after businesses from diverse industries merged. Kumar, S., & Bansal, L.K (2008) presented their findings stating improvement in financial performance with increase in working capital and debt-equity ratio. Similar hypothesis was tested by Ramakrishnan, (2008) and through his findings he has concluded on merging firms in India, appearing to improve financial performance from pre-to-post merger period. On the other side, studies by Kar, R. N., & Soni, A.(2008) and Mantravedi. P & Reddy A.V., (2008) have proven findings of improvement of mergers of acquiring companies' operating performance that involve public traded companies post liberalization through analyzing profitability ratios.

Phase 3: 2010s

Rani, N., Yadav, S.S., & Jain, P.K. (2012) studied the motive of mergers that accounted for synergistic operations which was due to the changing regulatory framework and a follow up study for analyzing the financial performance for a sample across different industries by Rani, N., Yadav, S. S., & Jain, P. K. (2015) and found "improvement in the long-term operating profit margin of the acquiring firms". Leepsa, N. M., & Mishra, C. S (2012) presented their findings exclusively to the manufacturing sector and found that the profitability position of companies has increased and have been statistically significant post-merger. Khan (2012), Ghosh, P., & Das, R. (2022) and Dugal, N., (2015) have studied exclusively the banking sector showing positive affect by the event of merger. Sinha, P., & Gupta, S. (2011) and Sinha, N., Kaushik, K.P., & Chaudhary, T. (2010) have examined companies in financial services and concluded on a balanced opinion of companies showing positive improvement in financial position however there are also evidence of deteriorating liquidity conditions. Sami, S. (2014) examined a merger of a pharmaceutical company and presented its findings showing improvement in sales after merger. Chen, Lee, Kee & Quah (2019) examined horizontal and conglomerate M&A and found a positive relationship with respect to firms' performance post-merger.

4.3 Negative

Notable studies have been conducted regarding analyzing the changes in operation performance around acquisitions, and this has been studied by Ghosh, (2001), through his research design where the firms were matched on pre-acquisition performance and size of merging firms. However, there has been no evidence of increase in operating cash flow performance following acquisitions. Beena,(2000) and Sharma & Ho, (2002) do have sufficient evidence that imply corporate acquisitions across manufacturing sectors and Australian based firms not leading to improvement in operating performance. Study conducted by Pazarskis, Vogiatzogloy, Christodoulou, and Drogalas (2006) identifies post-acquisition performance of Greek companies listed on Athens Stock Exchange and provides evidence of decrease in profitability post M&A with no significant improvement in performance. Mantravedi, P., & Reddy, A.V. (2007) presented their findings on operating performance of the Indian industry where their research concluded showing no significant change post-merger or in some cases, there was declining margin ratios.

Post the global financial crisis, there are studies which are evidently proving no significant impact on profitability of firms post acquisition. Rajkumar (2009) findings show no improvement in post-merger financial performance, Mishra & Chandra (2010) study shows no significant impact on profitability of the firms in the long run among Indian pharmaceutical companies. Gurnasekaran, I., & Selvam, M. (2011) conclude on their study of mergers describing the financial evaluation proving unsuccessful as the "performance of the combined

firms has not been significantly different from the aggregate performance of the acquirer and target companies prior to the merger". Bhabra, H. S., & Huang, J. (2013) examined 136 M&A deals listed on Shanghai and Shenzhen Stock Exchange consisting of data set dominant in domestic deals with unlisted targets. The authors found no change in operating performance from pre-to-post acquisition for the acquirers.

Kamra, K., & Gupta, M. (2016) analyzed the performance of the acquisition of a noteworthy deal in an Indian pharmaceutical industry, where the authors conclude a company benefiting on a long run, but "did not prove to be much of significance on the grounds of performance and profitability". Thomas. J.O.S.Y., George, D.M., & Jain, D.P. (2019) found evidence of no change in financial performance of pharmaceutical companies' post-merger.

4. Data Sources and Methodology

This methodology adopts an approach of analyzing the acquired firms' financial performance in order to come to a conclusion regarding the improvement after takeovers by sticking to the hypothesis. The current study has utilized secondary sources of data. The primary sources include Security Exchange Board of India (SEBI), the National Stock Exchange (NSE), the Bombay Stock Exchange (BSE), MoneyControl, Market Screener, and S&P Capital IQ.

The target companies involved in takeovers from January 2017 to September 2022 make up the sample size for this study. A sufficient amount of data was available during the sample period to demonstrate post-takeover performance. The sample size is chosen considering the availability of up to five years of post acquisition data of the acquired firms since the post-takeover data must be sufficient for the analysis of the sample to effectively gauge the performance of the firm.

The earliest announcements of takeovers by publicly listed Indian companies were found from the SEBI database. To choose the final sample, several filters were applied as listed below. The sources of data for this study were aligned with the modus operandi of the acquisition activity and are trusted by most businesses and corporates for their timely decision making.

1. SEBI website being the only source of getting information of open offers and announcement for exit options for shareholders post takeover that results in change in control of the target company, SEBI is part of the government's statutory body and provisions the Securities and Exchanges Board of India Act, 1992.
2. NSE was recognized as a stock exchange by SEBI in 1993 and is a supported leadership in the Indian and international exchange industries across all asset classes.
3. BSE is a premier Indian stock exchange who enables the trading of equity, currencies, derivatives, mutual funds, and debt instruments on an effective and transparent market which has over 250 companies listed. The categorization of the data collected is in line classification as per BSE.
4. MoneyControl is the largest online financial platform in India with over 17 million visitors every month. The financial data for the takeovers listed on SEBI were collected from this website.
5. Market Screener runs a global stock market and financial news website from which the details on acquisitions, takeovers and open offers which were sourced from S&P capital IQ intelligence.

An exhaustive database for takeovers in India from period 2017 up to 2022 has been prepared sourcing data from BSE, NSE and SEBI for Indian listed firms. The study considers only target companies undergoing a takeover and have announced an open offer announcement for public acquisitions of shareholder's equity, post acquiring the company. Classification of data is performed following the capital market online data bank, BSE and NSE.

5.1 Objectives

The outbreak of coronavirus (2019-nCoV) on January 30, 2020, constituted a public health emergency concern (PHEIC). Indian took a hard hit, particularly during the second wave of the virus in the spring of 2021. The havoc created by the pandemic on economies across the globe severely shattered their respective stock markets. The purpose of this research is to investigate the M&A activity of Indian companies that are announced and listed on SEBI between a period of 2017 and mid-2022. The paper examines the following objectives:

1. To investigate trends in M&A of Indian companies in the due course of the Covid-19 pandemic.
2. To compare the financial performance of the acquired firms with respect to its profitability, efficiency, liquidity and leverage post merger.

5.2 Hypotheses

The following study examines the following hypothesis, basing it in the research gap from the literature:

H0: There is no significant difference between the pre- and post-acquisition year for variables (Profitability, ROI, Turnover, Liquidity)

H1: There is a significant difference between the pre- and post-acquisition year for variables (Profitability, ROI, Turnover, Liquidity)

H0: Profitability positions of target firms do not improve post-acquisition.

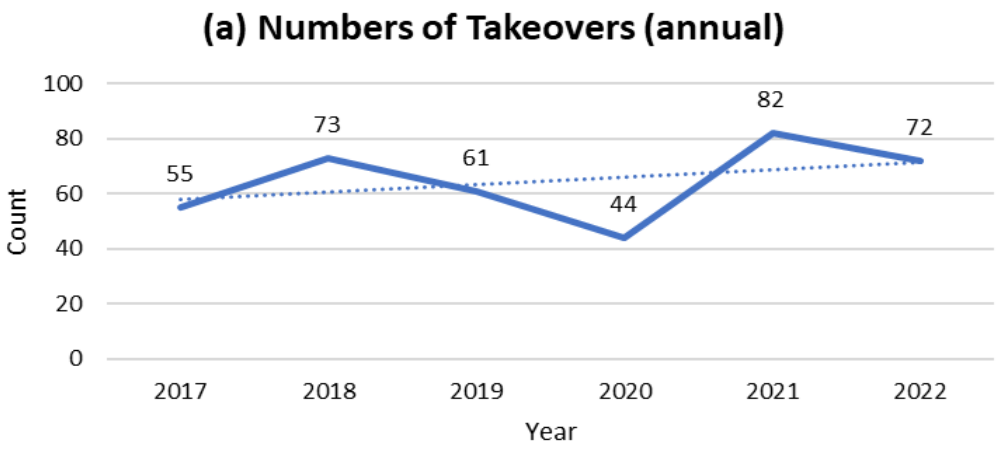
H2: Profitability positions of target firms improve post-acquisition.
H0: Efficiency of acquired firms does not show improvement in utilization of resources post acquisition.
H3: Efficiency of acquired firms shows improvement in utilization of resources post acquisition.

6. Analysis and Findings
6.1 To Investigate Trends in M&A of Indian Companies in the due course of the Covid-19 Pandemic
The dataset considered is an exhaustive list of open offers and completed acquisitions at the primary stage. However, there is limited data on few companies announcing post acquisition of the target companies. By using this data bank, a total of 388 takeovers have been found and trend analysis has been carried out.

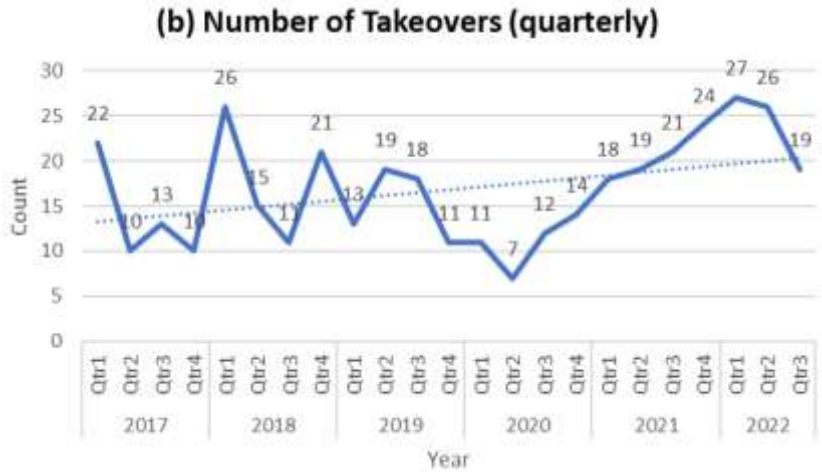
Trend Analysis

	Sector Type (Count)						
Year	Construction and Real Estate	Electricity	Manufacturing	Merchandising	Mining	Service	Grand Total
2017	1		15	20	1	18	55
2018	4	2	9	26		32	73
2019	1	1	11	27		21	61
2020		1	14	11	1	17	44
2021	8		19	22	4	29	82
2022	2		21	27	2	20	72
Grand Total	16	4	89	133	8	137	387

The table was further classified into the type of sector the companies operate and respectively the trend analysis is carried out among the different sector types.

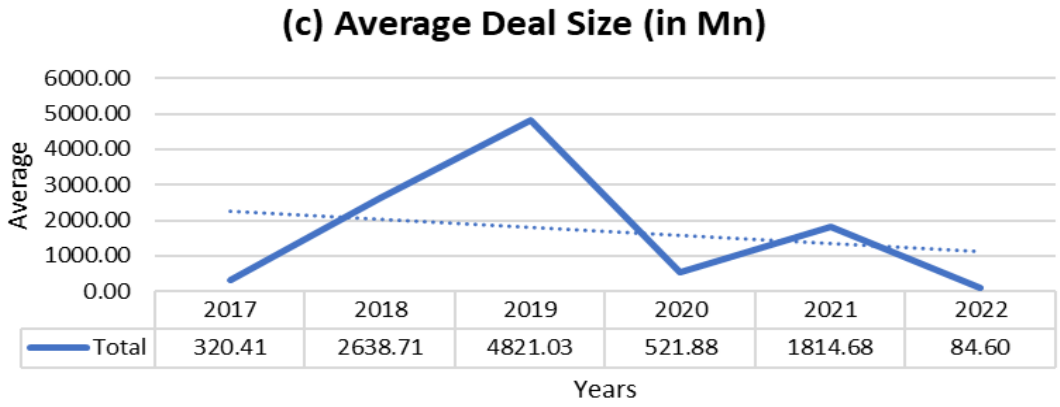


The total takeovers depicted in (a) accounted for 387, and the trend of takeovers is observed to be an upward trend. The year 2021 experienced the highest number of listings for takeovers, i.e.,82. The count reduced in the year 2020, which may be the effect of Covid-19 which affected many businesses in terms of financial and operating performance which is investigated at the later part of this study.



This gives an overview of quarter-wise count of takeovers as we can possibly see the effect of Covid-19 raised between the end quarter of 2019 and up to the third quarter of 2020. Due to the disruptions in the supply chain and globalization activities, several businesses have been primarily driven and motivated to restructure their business models and operating measures.

The data available on deal size is taken from the S&P capital IQ for which the deal was announced as an open offer and very little data on completed acquisition or entering into a share purchase agreement.



An average of the deal size was plotted in © in order to see the trend of deals happening over the years. To infer, the deal size seems to be in a downward trend showing decrease in big ticket takeovers or acquisitions as a part of efficient strategic moves in acquiring companies on best valued deals.

6.2 To Compare the Financial Performance of Acquired Firms with respect to its Profitability, Efficiency, Liquidity, and Leverage post-merger

After the trend analysis is executed, the research shifts to receive the second objective. The final sample to conduct the same consists of 381 takeovers. The sample distribution across years is shown in the table below. The table clearly shows that 2021 was the year with the highest percentage of acquisitions, at 21 per cent. This has also been the year in which there were covid-19 variants increased.

Year	No. of acquisitions studied	No. of acquisitions analysed
2017	55 (14.21%)	16 (30.19%)
2018	73 (18.86%)	20 (37.74%)
2019	61 (15.76%)	9 (16.98%)
2020	44 (11.37%)	8 (15.09%)
2021	82 (21.19%)	0
2022	72 (18.60)	0
Total	387 (100%)	53 (100%)

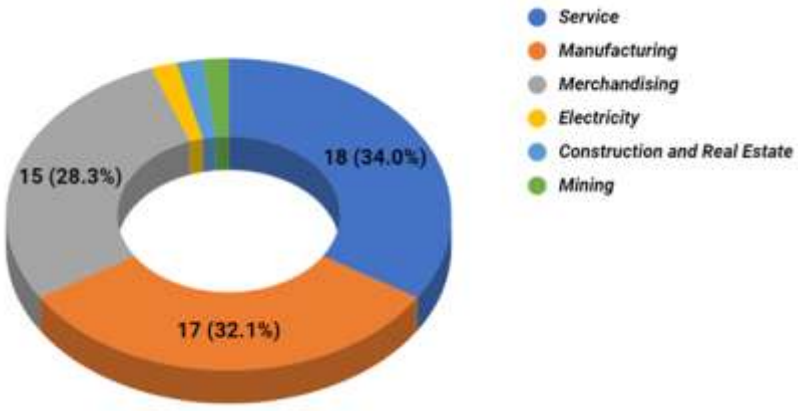
Only those companies who have data accessible in pairs for both before and after acquisition were maintained in the analysis after the data was checked for outliers. Analysis was done for the means of the following pairs:

- One year before and one after acquisition (-1, 1)
- Two years before and after acquisition (-2, 2)
- Three years before and after acquisition (-3, 3)
- Four years before and after acquisition (-4, 4)
- Five years before and after acquisition (-5, 5)

Owing to the inconsistencies in liquidity ratios and exclusion of extreme outliers owed to the utilization of long-term analysis of financial performance of 53 firms for pre- and post- acquisition, the ratio analysis was carried out by analyzing long-term financial performance as, 53 companies for one year pre- and post acquisition, the average of two years pre- and post- acquisition (-2, 2) of 48 firms, the average of three years pre- and post-acquisition (-3, 3) of 37 firms, the average of four years pre- and post- acquisition (-4, 4) of 16 firms, and the average of five years pre- and post- acquisition (-5, 5) of 6 firms were analyzed. The final sample consists of 32.1% firms in the manufacturing sector, 34% firms in the service sector, 28.3% firms in merchandising, 5.6% in mining, real estate, and construction.

The data used has up to five years prior to and after the acquisition from the reference period of January 1, 2017, to October 1, 2022. Year 0 is considered as the year of acquisition and is factored out from the calculation. Including it may cause misinterpretation of information due to distortion of data because of changes in reporting due to the takeover. Hence, financial performance is analyzed and reported for a reference period of up to ten years, that is segregated five years pre- and post the event. Pre-acquisition (period -5 to -1) and post-acquisition (1 to 5) performances were calculated for the acquired company. A holistic view was developed for a short-term and long-term profitability and performance of acquisition considering various accounting measures for investigation of this study.

Ratio analysis was used to assess the acquired firms' financial performance. The research assessed and contrasted the acquired companies' pre- and post- takeover financial performance in terms of profitability, operational effectiveness, leverage, and liquidity. The increase in profitability in the period following an takeover can be attributed to a number of factors, including stronger operating margins, increased asset productivity, lower costs, increased market power, etc. 14 ratios were therefore utilized in the study, most of which related to profitability, efficiency, leverage and liquidity. The 12 ratios are: Return on Equity (ROE), Return on Capital Employed (ROCE), Return on Assets (ROA), Operating Margin (OpM), Gross Profit Margin (GpM) and Net Profit Margin (NpM), Employee Cost, Asset Turnover, Assets Turnover, Current Ratio (CR), Quick Ratio (QR), and Total Debt.



According to the proposed hypothesis, acquired enterprises perform better financially and operationally than they did before the purchase. Profitability, efficiency, leverage, and liquidity are the four main groupings of ratios used to measure financial performance.

6.2.1 Profitability Ratio

6.2.1.1 Profitability Ratios: Based on Investments

The table XX presents a comparison of mean using paired sample t-test. According to the pertinent data in the table, mean profitability as measured by the rate of return on investment (ROCE and ROE) has increased since the post- M&A era. The paired sample t-test for comparison of means (-5, 5) reveals that ROE exhibits an impressive increase of 15.58% (significant at 1%) during the post-M&A period. Positive mean difference in ROE observed for majority of acquisitions in the samples used for analysis.

ROE							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	df	Significance
(-1, 1)	-11.18	11.00	-22.18	26 to 24	-1.468	52	0.148
(-2, 2)	-10.43	5.84	-16.27	29 to 18	-1.815	47	0.076
(-3, 3)	-11.10	6.36	-17.46	24 to 13	-2.001	36	0.053
(-4, 4)	-16.12	7.17	-23.29	11 to 5	-2.249	15	0.040
(-5, 5)	-14.90	0.67	-15.58	4 to 2	-1.333	5	0.240
ROCE							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	df	Significance
(-1, 1)	5.16	-5.63	10.78	25 to 28	0.588	52	0.559
(-2, 2)	56.44	-8.79	65.24	27 to 21	1.235	47	0.223
(-3, 3)	92.82	13.93	78.89	20 to 17	1.330	36	0.192
(-4, 4)	83.68	11.82	71.86	7 to 9	1.034	15	0.317
(-5, 5)	12.84	2.72	10.12	3 to 3	0.571	5	0.593
ROA							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	df	Significance
(-1, 1)	-19.47	-10.12	-9.34	24 to 29	-0.451	52	0.654
(-2, 2)	-60.05	-11.48	-48.57	22 to 26	-0.798	47	0.429
(-3, 3)	-48.86	-2.18	-46.68	20 to 17	-0.896	36	0.376
(-4, 4)	2.57	1.63	0.95	8 to 8	0.135	15	0.895
(-5, 5)	3.66	1.01	2.65	6 to 6	0.315	5	0.766

Profitability ratio in this paper are investments related. It has been hypothesized that the profitability positions of target firms are predicted to improve throughout the post-takeover. According to the pertinent statistics in the table, mean profitability as measured by the rate of return on investment (ROE, ROCE and ROA) has increased since the post- takeover. In the post-takeover, ROE has shown an incremental boost in its activity of 15.6% (significant at 1%), according to the paired t-test for comparison of means (-5, 5). Here, the t-value is less than 0.01 which enables us to reject the null hypothesis and conclude that the profitability position of the target firms improves during the post-acquisition period. The majority (80%) of acquirers show a positive mean difference in ROE.

Even though the ROE increased significantly, a severe decline has been seen in the ROCE post- M&A era. The acquirers' profitability declined as anticipated due to the management turmoil an organization undergoes post acquisition which leads to its inefficient management of employed capital. The t-value is not less than 0.01, which forces us to accept the null hypothesis and conclude that there has been no significant improvement in the profitability positions of the target firms. Table III clearly shows that ROCE decreased by more than 10% as a result of M&A. For all the pairs that were analyzed, the paired t-test reveals a significant difference between the mean ROCE after and before M&A. In one, two, three, four, and five years, the percentage shrinkage is 10.8, 65.2, 78.9, 71.9 and 10.1 percent, respectively. For all the pairs, a positive mean difference in ROCE is seen in the case of approximately 60% of the acquirers.

ROA has increased significantly for one year before and after (-1, 1), two years before and after (-2, 2) and three years before and after (-3, 3), the M&A transaction during the pandemic. However, there has been no such improvement for four years before and after (-4, 4) and five years before and after (-5, 5).

Operating Margin							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	df	Significance
(-1, 1)	-7.20	-98.77	91.57	24 to 20	0.852	43	0.399
(-2, 2)	-163.78	-46.56	-117.22	24 to 18	-0.808	41	0.423
(-3, 3)	-189.79	-33.16	-156.63	19 to 15	-0.954	33	0.347
(-4, 4)	-208.29	-27.17	-181.12	7 to 7	-0.895	13	0.387
(-5, 5)	-393.62	-139.68	-253.94	3 to 3	-0.525	5	0.622
Gross Profit Margin							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	df	Significance
(-1, 1)	78.20	-93.89	172.09	24 to 20	1.255	43	0.216
(-2, 2)	-109.80	-42.28	-67.53	24 to 18	-0.459	41	0.649
(-3, 3)	-158.66	-29.29	-129.37	19 to 15	-0.834	33	0.410
(-4, 4)	-59.25	-21.64	-37.61	7 to 7	-0.328	13	0.748
(-5, 5)	-82.91	-138.88	55.97	3 to 3	0.257	5	0.808
Net Profit Margin							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	df	Significance
(-1, 1)	-177.05	-105.16	-71.89	25 to 19	-0.308	43	0.759
(-2, 2)	-251.93	-53.02	-198.91	22 to 20	-1.058	41	0.296
(-3, 3)	-174.07	-39.67	-134.40	21 to 13	-0.816	33	0.420
(-4, 4)	-275.51	-46.03	-229.48	7 to 7	-0.841	13	0.416
(-5, 5)	-553.68	-143.93	-409.76	3 to 3	-0.655	5	0.541

The paired samples t-test for comparing the means of profitability ratios based on sales (OpM, GpM and NpM) before and after takeover is shown in Table IV. According to the relevant statistics in the table, NpM displays remarkable progress across all pairs. Mean NpM rose by 71.9% (statistically significant) between one year before and after takeover. Additionally, the five-year average is statistically significant for the positive mean difference. In each of the five years after the acquisition relative to the year before the acquisition, an impressively positive mean difference in NpM is seen, In the case of 60% acquirers, a positive mean difference is discovered.

Based on sales for the first, second, third, fourth and fifth years before and after M&A, respectively, the positive mean difference percentage of -91.6%, 117.2%, 156.6%, 181.1% and 253.9% is seen in OpM. Operating profit has improved over the longer periods of time showing that years after an acquisition, the firm tends to perform better.

GpM has increased significantly for two years before and after, three years before and after and four years before and after the takeover transaction during the pandemic. However, there has been no such improvement for one year before and after (-1, 1) and five eyes before and after (-5, 5).

6.2.1.2 Profitability ratios related to expense

Employee Cost							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	Df	Significance
(-1, 1)	57.63	91.29	-33.66	30:18	-1.113	47	0.271
(-2, 2)	58.43	85.08	-26.65	30:15	-1.059	45	0.295
(-3, 3)	78.08	115.96	-37.88	20:10	-1.014	30	0.319
(-4, 4)	0.54	1.54	-1.00	5:5	-0.886	9	0.399
(-5, 5)	0.50	0.37	0.13	2:2	0.551	3	0.620

Based on labor expenses for the first, second, third, fourth and fifth years before and after M&A, respectively, the positive mean difference percentage of 33.7%, 26.7%, 37.9%, 1% and -0.13% is seen in Labour Expense Ratio, which shows a drastic decline. This might be because of changing team dynamics due to the post-acquisition phase and other macro-economic factors. A paired t-test was used to determine whether

there was a significant change in the year before and after an acquisition. The t-value is less than 0.01 demonstrating that we reject the null hypothesis that there is no improvement pre- and post- acquisition. Four years before and after acquisition there is a positive difference in the labor expense ratio (significant at 1%), however, five years before and after M&A, labor costs declined.

6.2.2 Efficiency Ratio

Asset Turnover							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	Df	Significance
(-1, 1)	75.10	36.55	38.55	17:26	1.863	42	0.069
(-2, 2)	70.69	36.62	34.06	19:22	1.858	40	0.070
(-3, 3)	70.85	50.05	20.80	18:15	0.971	32	0.339
(-4, 4)	65.39	49.88	15.52	8:6	0.372	13	0.716
(-5, 5)	84.30	70.73	13.57	3:3	0.146	5	0.890
Inventory Turnover							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	Df	Significance
(-1, 1)	206.88	30.43	176.45	7:20	1.298	26	0.206
(-2, 2)	124.40	64.71	59.69	11:17	0.655	27	0.518
(-3, 3)	103.36	179.41	-76.05	12:11	-0.578	22	0.569
(-4, 4)	82.70	732.79	-650.09	5:3	-1.210	7	0.266
(-5, 5)	131.55	369.86	-238.32	3:1	-0.597	3	0.593

The operational success of an acquisition is evaluated using efficiency ratios following an M&A transaction. Two efficiency ratios are analyzed which are based on Assets Turnover and Inventory Turnover. It is theorized that after M&A, the efficiency of acquirers has improved in terms of resource usage. According to the relevant information in Table VI, The ATR and ITR, on the surface at least, do not appear to be satisfactory and are a sign of underutilization of resources, both before and after the M&A.

However, the mean difference for ITR is positive for three years before and after, four years before and after and five years before and after M&A. The t-value of AATR (for the entire study period) and first two periods of ITR are insignificant. The t-value is more than 0.01, which concludes that the null hypothesis of the factors showing no significant improvement is accepted. This suggests that the mean ITR difference between pre- and post-M&A three years before and after, four years before and after and five years before and after was just a coincidence, and it is therefore impossible to conclude that M&A significantly improved the ATR or the ITR of the acquirers.

Contrarily, ITR has provided a better picture of the effectiveness of inventory utilization both pre- and post M&A. A paired sample t-test reveals an incremental positive difference in ITR three years before and after, four years before and after and five years before and after M&A transactions. This has been marked by an exponential hike in the mean difference, i.e., 76.1%, 650.1% and 238.3%, which confirms the improvement. Additionally, the majority (88%) of acquired firms have been found to have a positive mean difference in ATR and ITR collectively.

6.2.3 Liquidity Ratio

Current Ratio							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	Df	Significance
(-1, 1)	1.02	1.32	-0.30	11 to 5	-1.852	15	0.084
(-2, 2)	1.01	1.42	-0.41	9 to 4	-2.790	12	0.016
(-3, 3)	0.98	1.16	-0.17	5 to 4	-0.556	8	0.593
(-4, 4)	0.81	1.01	-0.20	2 to 1	-1.000	2	0.423
(-5, 5)	0.62	1.03	-0.41	2 to 0	-3.000	1	0.205
Quick Ratio							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	Df	Significance
(-1, 1)	0.94	1.04	-0.11	11 to 7	-0.618	17	0.545
(-2, 2)	0.79	1.15	-0.35	9 to 4	-2.485	12	0.029
(-3, 3)	1.10	1.28	-0.18	6 to 5	-0.643	10	0.535
(-4, 4)	0.68	0.83	-0.15	2 to 1	-0.669	2	0.573
(-5, 5)	0.54	0.89	-0.36	2 to 0	-1.449	1	0.385

The mean current ratio and quick ratio has been used to compare the liquidity situation pre- and post-M&A transactions. Indian acquired companies initially seem to have a level of liquidity that is both adequate and satisfactory, both pre- and post M&A. Bank borrowings, bank-issued cash credit limitations and overdrafts are available to corporate companies in India for short-term borrowing and because of these facilities, management is able to operate with a lower working capital margin, which is highlighted by the low current ratio. The mean current ratio is relatively moderate pre- and post-covid era, with values one, two, three, four and five years before, i.e., 1.32, 1.42, 1.16, 1.01 and 1.03, respectively. Along with that, the mean quick ratio is relatively low, with values one, two, three, four and five years before, i.e., 1.04, 1.15, 1.28, 0.83 and 0.89, respectively. The liquidity ratios in the range of 1.5 to 2.0 is generally regarded as healthy.

A low liquidity ratio, below 0.01, may point to underlying liquidity problems that increase the risk for the organization, whereas a high liquidity ratio is an indication of poor credit management and careless management methods. Here, the low liquidity ratio only shows an incremental improvement in the M&A transaction. The majority (200%) of acquired firms shows a positive mean difference in ROE.

6.2.4 Leverage Ratio

Total Debt							
Paired Sample (Before & After)	Mean Ratio Before	Mean Ratio After	Mean difference	Positive: Negative	t- value	Df	Significance
(-1, 1)	-0.78	2.25	-3.02	14:18	-1.507	31	0.142
(-2, 2)	-0.42	1.59	-2.01	19:15	-1.846	34	0.074
(-3, 3)	-0.42	1.71	-2.13	17:11	-1.938	27	0.063
(-4, 4)	-0.40	1.70	-2.09	9:4	-1.221	12	0.246
(-5, 5)	0.13	-0.56	0.69	2:3	1.829	4	0.141

The debt to assets ratio shown in Table VIII confirms that the total debt might not be a substantial source of financing for acquiring firms' total assets. As anticipated, there has been significant change in the acquirers' leverage post-M&A period. When the company's debt ratio is between 0.3 and 0.6, it is considered to be appealing. Debt ratios of 0.4 or below are favored from a risk perspective, whereas a debt ratio of 0.6 or more makes borrowing money more difficult.

Post pandemic, the leverage ratio hiked up to 2.25, 1.59, 1.71 and 1.70 for values one, two, three and four years before M&A transactions from -0.78, -0.42, -0.42 and -0.40 respectively. The covid-19 pandemic had affected the companies adversely and has made it harder for businesses to pay back their debt and has dented their ability to pay the interest on their loans.

6. Conclusions

By analyzing the financial results of a sample of 53 target Indian companies from January 1, 2007 to January 1, 2021, this study has evaluated for evidence of financial improvement in Indian acquisitions. The initial analysis confirms the increasing trend that recognised in the year 2021 with most acquisitions announced post the third quarter of 2021. Although the deal size of the acquisition activity saw a downward trend, the

volume of deals compared to 2002 has increased by 2021. Evidence of a merger wave could be seen as a result of the pandemic which may have caused the businesses to restructure their operations.

According to the study, short-term improvements in ROA outweigh short-term improvements in ROE in terms of profitability. The acquisition activity is responsible for the increase in performance. The efficiency ratios have been identified to be underutilized by the acquired firms however, they seem to have been improved in utilization of inventory and defined by paired sample tests with negative t-values, which stood statistically significant. Due to restructuring of the management post acquisition, around 100 per cent of the sale of inventory (inventory turnover) could not be achieved and as a result, the inventory turnover ratio slowly increased. The covid-19 pandemic appears to have contributed to the low inventory turnover of acquired businesses.

The liquidity position has been managed satisfactorily and is statistically significant during post-acquisition period which has been observed. The profitability margins have seen impressive improvement post acquisition of the target firms, this shows evidence of a control on the overhead costs and enhanced sales. Based on empirical findings, the study concludes that target companies in India have fared better financially following takeover than they did prior to acquisition activity. However, it doesn't appear that the ATR and ROCE have a notable effect on the performance of the target firm.

These results are consistent with those of Neelam Rani, Surendra S Yadav, P K Jain (2013). The study contributes to the research on mergers and acquisition corporate strategy. The target firms which are on the verge of closure gain a significant creation and may result in the significant contribution to the local and national economy.

7. Recommendations for Future Study

By calculating and comparing results with averages for the industry or sector, future research in this area could build on the findings of the present study. If there are any differences, those differences could then be further investigated to gain new insights. In order to correlate the results of the studies showing negative port-merger performance, researchers should also examine the returns to shareholders of acquiring corporations involved in mergers in India.

8. Limitations

Due to the sample consisting solely of stock-for-stock takeovers, the study has neglected the influence of potential changes in the accounting methodologies used by various companies in the sample. The cost of acquisition for takeovers has also not been taken into account in the study because the technique used prevented an analysis of specific cases on this basis. Additionally, unlike some research, the current study did not employ any control groups (the industry average or businesses with comparable characteristics). To obtain objective results and take into account cross-sectional dependence, a sample covering a longer time-period was deemed sufficient. The cited methodological discrepancies may have had an impact on the results that were reported.

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