

An Event Study of M&A Announcements on Indian Banking and Automobile Firms

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Abstract

It has been discovered that Mergers and Acquisitions (M&A) exhibit varying levels of intensity over time, with certain periods characterized by heightened activity and others by reduced deal activity. The comparative analysis of the impact of M&A announcements on shareholders' wealth during these distinct periods has received limited scholarly attention. This paper seeks to examine and contrast the wealth effects of M&A announcements during different phases of deal activity within the Indian Banking and Automobile sectors from 2006 to 2020.

The standard event study methodology was employed to estimate abnormal returns and cumulative abnormal returns for acquiring firms in both domestic and global M&A announced during this timeframe. The results were evaluated and compared using both parametric and non-parametric tests. All analyses were conducted under the assumption that the Indian capital markets, along with certain international capital markets, operate efficiently in a semi-strong form.

Keywords: Mergers and acquisitions; Indian banks; Automobile companies; Event study analysis; Shareholders wealth.

Introduction

Mergers and acquisitions serve as strategic instruments for companies aiming to achieve growth, enhance competitiveness, and optimize resources. In the automobile sector, M&As have been particularly significant due to the industry's global nature, technological advancements, and the necessity for consolidation. The event study methodology has been extensively employed to evaluate the impact of M&A announcements on shareholder wealth and firm performance. This paper offers a comprehensive analysis of M&As in the automobile sector utilizing the event study approach, drawing insights from pertinent research papers.

Mergers and acquisitions in the banking sector can manifest in various forms, including horizontal mergers, vertical mergers, and conglomerate mergers. Understanding these different

types is essential for analyzing the impact of mergers and acquisitions on the banking sector. Each type of M&As possesses distinct characteristics and implications for the involved parties. Furthermore, cost savings and relationship effectiveness among the marketers of both the acquirer and the acquired firms are found to be highly significant and positively support M&A performance (Jedin, 2011). M&As in the banking sector can substantially influence financial performance, with event study methodology serving as a crucial tool for analyzing these effects. By examining stock price reactions to M&A announcements, researchers can quantify the financial implications for both acquiring and target firms, thereby revealing insights into market expectations and valuation changes.

M&As in the banking and automobile sectors are strategic maneuvers that can significantly affect stock performance, as evidenced by various studies employing event study methodologies. These studies analyze the effects of M&A on stock returns by examining abnormal returns (AR) and cumulative abnormal returns (CAR) around the 15 days' event window. The findings from different regions provide insights into the market's response to such corporate actions.

Literature Review in Automobile Sector

The success of cross-border M&As in the automobile sector often depends on the ability of the acquiring company to integrate the target firm effectively. For example, the acquisition of Volvo by Geely was successful in part due to Geely's ability to leverage Volvo's technology and brand reputation while maintaining Volvo's autonomy (Meng & Wang, 2021) (Gao, 2015). Conversely, the Daimler-Chrysler merger failed due to cultural differences and integration challenges, highlighting the importance of cultural compatibility in cross-border M&As (Fitriani et al., 2021). The paper analyzed 100 horizontal international mergers and acquisitions in the automotive supply industry from 1986 to 2004, using event study methodology to assess stock price reactions, confirming positive shareholder wealth effects despite the negative cross-border effect. This study on cross-border mergers in the automotive supply industry revealed that such transactions often result in positive abnormal returns for acquiring companies, particularly when the target is a subsidiary (Mentz & Schiereck, 2008). The research finding suggest that investors generally view the author who have reported zero or positive abnormal return to shareholders in short-run around the announcement period in the US market such as Lang et al. (1991), Moeller et al. (2004, 2005), Faccio et al. (2006), Masulis et al. (2007), Asquith (1983), Schwert (2000). Many studies reported a negative abnormal return to shareholders in the short run around the announcement period in the US market, Franks et al. (1991), Healy et al (1992). M&As in the automobile sector as value-creating events in the short term.

We analyze the main approaches to assessment of the impact of mergers and acquisitions on the company value including that of target firms and acquiring firms (Skvortsova et al., 2013).

Another study examining the financial strategy of acquirers in the automotive sector found that companies with higher financial liquidity, better return on capital, and greater indebtedness tend to achieve higher abnormal returns after consolidation. However, the study also noted that companies following a stable and prudent financing policy were more likely to experience

unsuccessful M&As ("The financial strategy of acquirers and M&A; A success in the automotive sector", 2022) (Marszalek et al., 2022).

Literature Review in Banking sector

For expanding the operations and cutting costs, Banks are using M&As as a strategy for achieving larger size, increased market share, faster growth and synergy for becoming more competitive through economies of scale. M&As in Indian Banking Sector. The Banking system of India started in 1770 and the first Bank was the Indian Bank known as the Bank of Hindustan (Naga & Tabassum, 2013). By the mid-1970s, the global financial system witnessed market-oriented reforms that led to liberalization in the financial system, such as the reduction of interest rate controls, removal of investment restrictions on financial institutions and a line of business restrictions, and control on international capital movements (Kumar, 2014). The internationalization of commercial banks is one of the manifestations of the globalization of the financial services industry. Yet, despite these obvious advantages, cross-border M&A activity in the financial services industry has picked up only recently, and the bulk of merger activity continues to take place at the domestic level (Buch et al., 2003). A research study is concerned with the impacts of national culture on the cross border-mergers and acquisitions performance in the banking industry across Egypt and UK through studying the role of the human side as a mediator variable (Kandil, 2011).

In the Indonesian banking sector, "M&A activities led to increased stock returns and positive cumulative abnormal returns, indicating a favorable market response. This suggests that investors anticipate profit gains from such activities, which can be beneficial for both internal management and investment decisions" (Suidarma & Remses, 2023). "A study concluded in Saudi Arabia, in that mergers were met with immediate positive market reactions, driven by expectations of synergistic benefits. However, the long-term effects varied, highlighting the complexity of M&A outcomes" (Sayed, 2024). Varghese & Thaha (2017) found significant AR for Kotak on the merger announcement day with ING Vysya, though short-term performance didn't change materially post-event

Contrarily, in India's banking sector, the majority of banks experienced negative AR and CAR following M&A events, suggesting an unfavorable market response. This indicates that while some banks benefited, the overall sentiment was negative, possibly due to market saturation or other economic factors (Rani & Sangeeta, 2023). The merger of the State Bank of India with its associates showed no significant difference in abnormal returns pre- and post-merger, implying that the market had already anticipated the merger's effects. This suggests that the market's efficiency in processing information can lead to neutral responses in some cases (Sasikala et al., 2024). The M&A market in the banking sector also exhibits specific characteristics during catastrophic events, such as those between 2020 and 2023. These events can alter the typical market dynamics, necessitating further research into their long-term impacts on M&A activities (Melnarowicz, 2024).

Research gap

There are many studies related M&A in banking sector using event study. But there are few studies which calculated individual abnormal return and cumulative abnormal return and test the returns using both parametric and non-parametric test together. There are few studies related to mergers and acquisitions in automobile using event study. There are very few studies in automobile sector using event study and test the returns using both non-parametric test and parametric test.

Objective

To evaluate the impact of merger announcement of the anchor firms stock price during their M&A period in the short run.

Table 1 & 2 provide details about the M&A of the various automobile and banking companies.

Table No-1: Details of Merger and Acquisition in Automobile Industries: -

Sl. No.	Anchor Company	Merged Companies	Merger Date	Announcement Date
1.	TATA Motors	Ford Motors (Jaguar and Land Rovers Brands)	June 2008	26 March 2008
2.	Mahindra & Mahindra	SsangYong Motor Company	March 2011	23 November 2010
3.	Volkswagen	Porsche	1 August 2012	5 July 2012
4.	Ashok Leyland Limited	Hinduja Tech limited	November 2014	1 October 2014
5.	Fiat	Chrysler	2014	20 January 2009
6.	Bharat Forge Limited	Walker Forge Tennessee	1 December 2016	18 November 2016
7.	Nissan Motor Co. Ltd	Mitsubishi Motor	October 2016	12 may 2016

Source: Compiled by author.

Table No-2: Details of Merger and Acquisition in Banks: -

Sl No.	Anchor company	Merged Companies	Merger Date	Announcement Date
1	Punjab National Bank	Oriental Bank of Commerce United Bank of India	1 April 2020	30 August 2019
2	Canara Bank	Syndicate Bank	1 April 2020	30 August 2019
3	Indian Bank	Allahabad Bank	1 April 2020	30 August 2019
4	Union Bank of India	Andhra Bank Corporation Bank	1 April 2020	30 August 2019
5	Bank of Baroda	Dena Bank	1 April 2019	2 January 2019

		Vijaya Bank		
6	State Bank of India	State Bank of Bikaner and Jaipur State Bank of Hyderabad State Bank of Mysore State Bank of Patiala State Bank of Travencore	1 April 2017	24 February 2017
7	Kotak Mahindra Bank	ING Vyasa Bank	20 November 2014	20 November 2014
8	ICICI Bank	Bank of Rajasthan Ltd.	23 May 2010	18 may 2010
9	HDFC Bank	Centurion Bank of Punjab	23 May 2008	1 April 2008
10	Indian Overseas Bank	Bharat Overseas Bank	31 March 2007	1 March 2007
11	Federal Bank	Ganesh Bank of Kurandwad	24 January 2006	9 January 2006

Source: Compiled by author.

Research methodology

The present study is an attempt to examine the impact of merger announcement on its stock returns. The effect of a merger on the performance of a company could be analyzed by many ways. One of the popular methods is an event study. A total 18 firms (11 Banks, 8 Automobile companies) that merged between 2006-2020 were taken for the study. The Banking companies include, Punjab National Bank, Canara Bank, Indian Bank, Union Bank of India, Bank of Baroda, State Bank of India, Kotak Mahindra Bank, ICICI Bank, HDFC Bank, Indian Overseas Bank, and Federal Bank. Automobile companies include, TATA Motors, Mahindra & Mahindra, Volkswagen, Ashok Leyland Limited, Fiat, Bharat Forge Limited, and Nissan Motor Co. Ltd. To conduct an event study daily closing price data of the companies and Nifty 50 were extracted from National Stock Exchange database (nseindia.in) and Yahoo finance. An Event window of 15 days was taken for the study. This period was divided into pre-event window period (t-7 to t-1 days), post-event window period (t+1 to +7 days) and event day 't'. The event day (t) is defined as the public announcement date of the merger or acquisition. We focus on this date because the efficient market hypothesis suggests that stock prices will adjust to new information as soon as it is disclosed, rather than on the later, less information rich effective date of the merger. Based upon standard literature an estimation period of 250 days (i.e., 250 days preceding the day t-7) was taken for calculating the normal returns. This was done to avoid any overlapping of the estimation period and the event period. The daily stock price data was extracted and converted into daily returns and then to abnormal returns using various python packages like – numpy, pandas, y.finance, nsepython and linregress. After which, the data was extracted to excel for further processing and analysis. The Jarque–Bera test and Parametric and Non-parametric test

like t-test, Patell's test, Wilcoxon signed-rank test and Sign test have been used to analyse the abnormal returns.

The Jarque–Bera test is used to check the normality of the data. Under H_0 JB follows a chi-square distribution with 2 degrees of freedom, with a critical value of 5.99 at $\alpha=0.05$. If $p\text{-value} < \alpha$, H_0 is rejected, which indicates data is not normal. If $p\text{-value} \geq \alpha$, H_0 is not reject, which indicates normality.

The parametric tests include the simple t-test and standardized Patell's test, 1976. The non-parametric test includes Sign test and Wilcoxon test. The simple t-test has been widely used and seems to well specified under different capital market conditions (Henderson,1990; Mackinlay, 1997). "Patell test adjusts for cross-sectional correlation and ranks daily abnormal returns (AR) against their standard deviations. In the Patell Test the t-stat absolute value ≥ 1.96 means statistically significant at 5% level. Absolute value between 1.645 and 1.96 means marginally significant at 10% level. Absolute value below 1.645 means not statistically significant." Wilcoxon signed-rank test test checks whether the distribution of CARs is symmetrically centered around zero, without assuming normality. "Sign test is a non-parametric statistical method used to evaluate the directionality of paired differences. It assesses whether the number of positive ARs differs significantly from what would be expected by chance. H_0 states that probability of a positive abnormal return is 0.5, which indicates no effect. H_1 states probability of a positive abnormal return is not 0.5, which indicates there is an effect."

Event Study Methodology

"Event study was invented by Ball & Brown in the year 1968. Event Study is a unique statistical technique for assessing the impact of an event on the value of a firm." "An event study conducted on a specific company examines any changes in its stock price and how it relates to a given event. It is used as a macroeconomic tool as well analyzing the influence of an event on an industry, sector or the overall market by looking at the impact of change in demand and supply".

The event study methodology involves analyzing the impact of specific events, such as M&A announcements, on stock prices and shareholder returns. This method is based on the efficient market hypothesis, which assumes that stock prices reflect all available information. By calculating abnormal returns (ARs) and cumulative abnormal returns (CARs), researchers can determine whether an event has a significant impact on a company's market value.

The merger event announcement date has been taken as an event date. To conduct an event study daily adjusted closing price of data, National stock exchange index data has been gathered from National stock exchange database (Nifty 50), in some cases data has been gathered from international stock exchange (like Tokyo, German, Italy). The daily stock returns have been calculated by taking the log-returns as follows:

$$R_t = \ln(P_t) - \ln(P_{t-1}) \dots \dots \dots 1$$

An event study is an established methodology impact of a certain event on the price of a certain type of asset. Abnormal returns are an important factor to analyze the impact of events like mergers and acquisition announcements. The idea behind this measure is to separate the effect of

other general market movements. The abnormal return is calculated by taking the difference between the actual return and the expected return. The abnormal returns are the difference between the actual returns and estimated returns using a market model.

$$R_i = \hat{\alpha} + \hat{\beta}_1 R_{mt} + \hat{\beta}_2 R_{mt}^2 + \hat{\beta}_3 R_{mt}^3 + \epsilon_{it}$$

Where R_i is the Abnormal return, R_{mt} is the return of the securities, $\hat{\alpha}$ is the expected return of the securities, and $\hat{\beta}_1, \hat{\beta}_2, \hat{\beta}_3$ coefficient obtained by using OLS over pre-event window period (-7,7).

Analysis

Table No.- 3: Results of Jarque-Bera test of Banks

Sl. No.	Banks	Jarque-bera test	p-value	Interpretation
1	Punjab National Bank	2.57916	0.27538	Normally distributed
2	Canara Bank	4.22318	0.12104	Normally distributed
3	Indian Bank	0.16113	0.92259	Normally distributed
4	Union Bank of India	1.26607	0.53097	Normally distributed
5	Bank of Baroda	0.27332	0.87226	Normally distributed
6	State Bank of India	0.95843	0.61926	Normally distributed
7	Kotak Mahindra Bank	7.87518	0.01949	Non-Normally distributed
8	ICICI Bank	1.89793	1.89793	Normally distributed
9	HDFC Bank	0.38424	0.82520	Normally distributed
10	Indian Overseas Bank	1.46378	0.48099	Normally distributed
11	Federal Bank	1.50054	0.47223	Normally distributed

Table 3 provides the results of the Jarque Bera test of the various banking companies. All the companies except Kotak Mahindra Bank show a p-value greater than 0.05 indicating normality. Kotak Mahindra Bank shows a Jarque-Bera statistic value of 7.88 and p-value of 0.019 rejecting the null hypothesis of normality and indicating that the data is not normal.

Table No.- 4: Results of Jarque-Bera test of Automobile Companies

Sl. No.	Automobile companies	Jarque-Bera test	p-value	Interpretation
1	Tata Motors	0.67635	0.71306	Normally distributed
2	Mahindra & Mahindra	0.75022	0.68721	Normally distributed
3	Volkswagen	13.73619	0.00104	Non-Normally distributed
4	Ashok Leyland	0.82892	0.66069	Normally distributed
5	Fiat	8.49962	0.01426	Non-Normally distributed
6	Bharat Forge	0.76688	0.68151	Normally distributed
7	Nissan Motor	6.68267	0.03538	Non-Normally distributed

Table 4 provides the results of the Jarque Bera test of the various Automobile companies. Tata Motors, Mahindra and Mahindra, Ashok Leyland and Bharat Forge show JB values less than 6 and p-values greater than 0.05, which means we fail to reject the null hypothesis of normality i.e., the data is normal. Volkswagen, Fiat and Nissan Motor show JB value greater than 6 and p-value less than 0.05 rejecting the null hypothesis of normality, indicating that the data is not normal. Since the results of the Jarque Bera test shows some companies have non normal data. Therefore, the study uses both parametric and non-parametric test to analyse the events.

Banking Companies

Table 5 and Table 6 show the simple t-statistics and Patell's t-statistics of the abnormal returns of the selected banking Companies. The simple t-statistics reveal strong and statistically significant abnormal returns for several banks immediately following the event date. Notably, public sector banks such as PNB, Canara Bank, Indian Bank, Union Bank, SBI, and Indian Overseas Bank show large negative t-statistics on t+1, with values far exceeding the critical threshold of ± 1.96 . For example, Canara Bank recorded a t-statistic of -11.20 and Indian Bank of -8.11, indicating highly significant negative abnormal returns, suggestive of a sharp adverse market reaction. This implies that investors responded negatively to the event for these banks.

In contrast, private sector banks such as Kotak Mahindra Bank, ICICI Bank, and HDFC Bank exhibit either positive or mildly negative abnormal returns, some of which are statistically significant. For instance, Kotak Bank shows a positive t-statistic of 2.29 on t+2, implying a favorable response. Pre-event significance in banks like Indian Bank (t-4 = 2.02) and Kotak (t-2 = 2.14) may suggest potential information leakage or market anticipation, where investors adjusted positions before the formal event. Overall, the Student's t-test points to strong, non-random movements in returns, especially negative ones for PSU banks, following the event.

The Patell's t-statistics, which account for non-constant variance and cross-sectional dependence, corroborate much of the evidence seen in the simple t-test results but provide a more statistically robust view. Again, public sector banks dominate in terms of significant negative abnormal returns, especially on t+1 and t+2. For example, Canara Bank's Patell t-statistic is -3.25 on t+1 and Indian Bank's is -2.96, reaffirming the strongly negative investor sentiment for these banks in the immediate aftermath of the event. These findings suggest the observed reactions are unlikely to be due to random chance.

Interestingly, Kotak Mahindra Bank and ICICI Bank, both private sector institutions, demonstrate positive and significant Patell's t-values. Kotak Bank's statistic of 0.34 on t+1 and ICICI's 1.99 on t+1 show investor confidence or possibly resilience compared to their public counterparts. Moreover, the Patell test refines the earlier inferences by filtering out potentially spurious significance caused by variance instability in the traditional t-test. The presence of significant values even prior to the event date in some banks again hints at early market positioning. Patell's test thus reinforces the conclusion that the event caused differential and significant impacts, especially negative ones on public banks, while private banks remained relatively insulated or positively perceived.

Table No.- 5: Abnormal Returns, t statistic and results of Patell test of the banks.

BAN	DAY	t-7	t-6	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t+6	t+7
PNB	Patell test	-0.427	0.685	1.009	0.097	0.667	-	0.205	-	-	0.098	0.878	-	0.603	1.399	0.133
	tstats	-	-	4.285	0.415	2.832	-	0.871	-	-	0.419	3.726	-	2.562	5.941	0.565
	AR	1.813	2.909	7	4	0	2.586	2	2.292	9.9605	8	8	1.878	1	3	4
CAN	Patell Test	-	-	0.023	0.002	0.015	-	0.004	-	-	0.002	0.020	-	0.013	0.031	0.003
	tstats	0.009	0.015	0	2	2	0.013	7	0.012	0.0534	3	0	0.010	7	8	0
	AR	-	-	0.878	-	0.855	-	-	-	-	-	-	-	1.099	1.294	0.172
INDI	Patell test	0.383	0.781	6	0.133	0	0.087	0.551	0.512	3.2506	1.320	0.261	0.649	3	9	5
	tstats	-	-	3.027	-	2.946	-	-	-	-	-	-	-	3.787	4.461	0.594
	AR	1.321	2.693	1	0.458	0	0.302	1.899	1.764	11.200	4.549	0.901	2.237	7	6	5
UNIO	Patell test	-	-	0.019	-	0.018	-	-	-	-	-	-	-	0.024	0.028	0.003
	tstats	0.008	0.017	3	0.002	8	0.001	0.012	0.011	0.0715	0.029	0.005	0.014	2	5	8
	AR	-	-	-	2.562	1.629	1.130	-	1.317	-	-	0.006	-	0.024	0.286	0.150
BAR	Patell test	0.576	0.251	0.613	3	6	6	0.306	8	2.9659	2.284	2	0.937	2	0	2
	tstats	2	9	7	-	-	-	2	-	-	7	-	3	-	-	-
	AR	-	-	-	7.010	4.458	3.093	-	3.605	-	-	0.016	-	0.066	0.782	0.411
SBI	Patell test	-	-	-	0.069	0.043	0.030	-	0.035	-	-	0.000	-	0.000	0.007	0.004
	tstats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	AR	-	-	0.054	-	0.495	-	0.223	-	-	-	0.627	-	0.520	2.181	0.003
ODA	Patell test	0.299	7	9	0.083	2	1.063	3	0.966	2.0340	0.196	6	0.203	8	3	3
	tstats	1	-	-	8	-	1	3	4	-	2	6	2	-	-	-
	AR	-	0.228	0.124	-	2.065	-	0.931	-	-	-	2.618	-	2.172	9.100	0.013
SBI	Patell test	-	0.001	0.000	-	0.012	-	0.005	-	-	-	0.016	-	0.013	0.055	0.000
	tstats	0.007	4	8	0.002	7	0.027	7	0.024	0.0521	0.005	1	0.005	4	9	1
	AR	-	1.298	0.709	0.440	-	0.238	0.197	-	0.7679	0.516	0.117	0.248	-	0.422	-
SBI	Patell test	-	8.592	4.696	2.916	-	1.578	1.303	-	5.0800	3.417	0.777	1.643	-	2.797	-
	tstats	0.532	4	4	6	4.420	5	4	5.099	-	7	4	0	3.551	4	3.338
	AR	-	0.033	0.018	0.011	-	0.006	0.005	-	0.0197	0.013	0.003	0.006	-	0.010	-
SBI	Patell test	0.407	-0.284	-	-	-	0.098	-	-0.07	0.3423	-0.194	-	-0.514	0.315	-0.316	0.650
	tstats	95	-	0.762	0.594	0.121	43	0.575	-	3	-	0.517	-	36	-	49
	AR	3.703	-	-	-	-	0.893	-	-0.637	3.1076	-	-	-4.668	2.862	-2.866	5.905
SBI	Patell test	3	2.578	6.924	5.394	1.106	56	5.224	-	1.761	4.701	-	-0.009	0.005	-0.005	0.011
	tstats	98	-	-	-	-	0.001	-	-0.001	0.0058	-	-	-	4	-	13
	AR	0.006	-	-	-	-	68	0.009	-	6	0.003	0.008	-	-	-	-

Table No.- 6: Abnormal Returns, t statistic and results of Patell test of the banks.

DAY	t-7	t-6	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t+6	t+7
Patell test	-0.3126	1.0517	-0.7723	-1.6152	0.5661	-1.5773	-0.1308	5.3601	1.9987	-0.5280	-1.8675	-0.1733	-0.4114	1.9813	0.2297
tstats	-0.6611	2.2245	-1.6335	-3.4163	1.1975	-3.3362	-0.2766	11.3372	4.2274	-1.1167	-3.9499	-0.3665	-0.8702	4.1906	0.4858
AR	-0.0041	0.0138	-0.0101	-0.0212	0.0074	-0.0207	-0.0017	0.0703	0.0262	-0.0069	-0.0245	-0.0023	-0.0054	0.0260	0.0030
Patell test	-0.5630	0.1480	-0.5161	-0.4732	0.3950	-0.3031	-0.1330	-0.9002	-1.9180	-0.0140	-0.4560	-0.4308	-0.6263	0.8575	-0.8240
tstats	-2.9719	0.7812	-2.7244	-2.4978	2.0851	-1.5998	-0.7018	-4.7520	10.1240	-0.0740	-2.4068	-2.2741	-3.3062	4.5264	-4.3496
AR	-0.0097	0.0026	-0.0089	-0.0082	0.0068	-0.0052	-0.0023	0.0155	-0.0331	-0.0002	-0.0079	-0.0074	-0.0108	0.0148	-0.0142
Patell test	-1.3146	-2.4778	0.3919	-1.5348	0.2133	-2.2518	-0.4707	0.9022	-0.5996	-0.0555	-0.0070	-0.9684	-0.8453	-2.4743	-1.8624
tstats	-3.6111	-6.8065	1.0764	-4.2160	0.5860	-6.1857	-1.2931	-2.4783	-1.6471	-0.1525	-0.0193	-2.6602	-2.3220	-6.7969	-5.1160
AR	-0.0233	-0.0440	-0.0070	-0.0272	0.0038	-0.0399	-0.0084	-0.0160	-0.0106	-0.0010	-0.0001	-0.0172	-0.0150	-0.0439	-0.0330
Patell test	0.3806	-0.3354	-0.3225	-0.2621	-0.1185	1.0503	-0.6916	-0.2465	-0.4800	-0.5959	-0.4600	-0.3837	-0.8710	-0.5769	-0.5325
tstats	2.6280	-2.3158	-2.2263	-1.8097	-0.8179	-7.2513	-4.7751	-1.7020	-3.3143	-4.1138	-3.1758	-2.6489	-6.0137	-3.9831	-3.6762
AR	0.0107	-0.0094	-0.0091	-0.0074	-0.0033	-0.0295	-0.0195	-0.0069	-0.0135	-0.0168	-0.0129	-0.0108	-0.0245	-0.0162	-0.0150
Patell test	0.4898	-0.3443	-0.3627	-0.3977	-0.0875	-1.1717	-0.7464	-0.2842	-0.6210	-0.7114	-0.5163	-0.4676	-0.9712	-0.6063	-0.7335
tstats	2.9247	-2.0563	-2.1658	-2.3748	-0.5227	-6.9968	-4.4574	-1.6973	-3.7086	-4.2484	-3.0830	-2.7924	-5.7995	-3.6206	-4.3801
AR	0.0123	-0.0086	-0.0091	-0.0100	-0.0022	-0.0293	-0.0187	-0.0071	-0.0155	-0.0178	-0.0129	-0.0117	-0.0243	-0.0152	-0.0184

BANK
KOTAK
ICICI
HDFC
INDIAN OVERSEAS
FEDERAL

Automobile Companies

Table No.- 7: Abnormal Returns, t statistic, results of Patell test of the Automobile firms.

t-6	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t+6	t+7
0.6286	-	-	1.0889	-	-	-	-	-	0.4375	-	-	2.8525	-
1.5424	-	-	2.6720	-	-	-	-	-	1.0736	-	-	6.9998	-
0.0048	-	-	0.0083	-	-	-	-	-	0.0033	-	-	0.0218	-
-	1.5344	-	-	-	-	0.5477	2.7236	0.4835	-	0.0125	-	1.7709	-
-	4.4498	-	-	-	-	1.5883	7.8988	1.4022	-	0.0361	-	5.1357	-
-	0.0241	-	0.0000	-	-	0.0086	0.0428	0.0076	-	0.0002	-	0.0278	-
-	1.2908	-	-	-	1.0502	5.0691	-	0.0999	0.5151	-	1.5750	0.8540	-
-	3.1224	-	-	-	2.5403	12.261	-	0.2417	1.2459	-	3.8098	2.0658	-
-	0.0182	-	-	-	0.0148	0.0714	-	0.0014	0.0073	-	0.0222	0.0120	-
-	-	0.1424	0.8461	1.3968	-	0.9062	0.8480	1.0369	0.4335	-	0.2424	-	-
-	-	0.7207	4.2838	7.0715	-	4.5879	4.2932	5.2494	2.1945	-	1.2270	-	-
-	-	0.0038	0.0227	0.0375	-	0.0243	0.0228	0.0279	0.0116	-	0.0065	-	-
-	-	0.6473	-	-	-	-	0.5810	-	-	-	-	1.4534	-
-	-	1.7528	-	-	-	-	1.5732	-	-	-	-	3.9358	-
-	-	0.0188	-	-	-	-	0.0169	-	-	-	-	0.0423	-
2.9442	-	0.7199	3.7112	0.5932	0.1780	0.5412	-	0.6445	1.2087	1.6838	-	-	-
7.3500	-	1.7971	9.2649	1.4809	0.4442	1.3511	-	1.6090	3.0174	4.2034	-	-	-
0.0489	-	0.0120	0.0617	0.0099	0.0030	0.0090	-	0.0107	0.0201	0.0280	-	-	-
-	-	1.8588	-	0.9743	-	-	4.0482	0.3682	0.4185	-	0.2212	0.3597	0.6652
-	-	5.2304	-	2.7415	-	-	11.390	1.0360	1.1774	-	0.6225	1.0122	1.8716
-	-	0.0248	-	0.0130	-	-	0.0541	0.0049	0.0056	-	0.0030	0.0048	0.0089

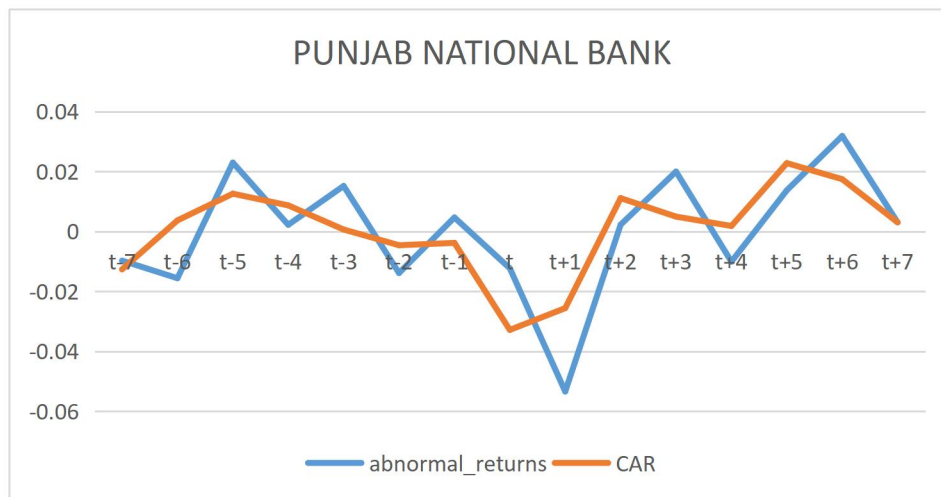
	Day	t-7
TATA	Patell	-
	tstats	-
	AR	-
M&M	Patell	1.5242
	tstats	4.4202
	AR	0.0239
VOLKSWAGEN	Patell	-
	tstats	-
	AR	-
ASHOK LEYLAND	Patell	0.8171
	tstats	4.1366
	AR	0.0220
FIAT	Patell	1.4813
	tstats	4.0112
	AR	0.0431
BHARAT FORGE	Patell	-
	tstats	-
	AR	-
NISSAN	Patell	0.1180
	t value	0.3321
	AR	0.0016

Table 7 show the simple t-statistics and Patell's t-statistics of the abnormal returns of the selected automobile companies. The analysis reveals that several firms experienced significant market reactions. Notably, Volkswagen recorded a highly significant positive abnormal return on the event day with a t-statistic of 3.69, indicating a strong favourable market response to the event. Similarly, Nissan showed a significant reaction on the day after the event (t+1) with a t-value of 3.31, suggesting a delayed but strong positive investor sentiment. M&M demonstrated a statistically significant positive abnormal return on t+1, with a t-value of 2.71, which may reflect optimistic post-event reassessment by investors. On the other hand, FIAT witnessed a strong negative reaction at t+2, with a t-statistic of -3.98, implying a substantial decline in market valuation following the event. Interestingly, TATA Motors displayed a significant negative abnormal return prior to the event (t-2), with a t-value of -3.96, which may point to information leakage or early market anticipation. Meanwhile, Ashok Leyland and Bharat Forge exhibited no significant abnormal returns on any day, suggesting the event had no measurable effect on their stock prices.

The results from Patell's test largely confirm and amplify the findings from the simple t-test. Volkswagen again stands out, with an even more pronounced positive abnormal return on the event day (t) reflected in a Patell's t-statistic of 5.07, providing very strong evidence of a positive market reaction. Similarly, Nissan's response at t+1 becomes even more compelling under Patell's test, with a t-statistic of 4.05, reinforcing the significance of the event's impact. M&M also retains significance at t+1, with a t-value of 2.72, confirming consistent positive investor sentiment. On the negative side, FIAT's abnormal return at t+2 becomes even more significant under Patell's methodology, registering a t-statistic of -4.85, which suggests a severe negative reassessment by investors. TATA Motors also shows a persistently significant negative return at t-2, with the same t-statistic of -3.96, supporting the idea of possible pre-event market adjustments. As with the Student's t-test, Ashok Leyland and Bharat Forge do not exhibit any significant abnormal returns under Patell's test, implying that the event did not materially influence their stock prices.

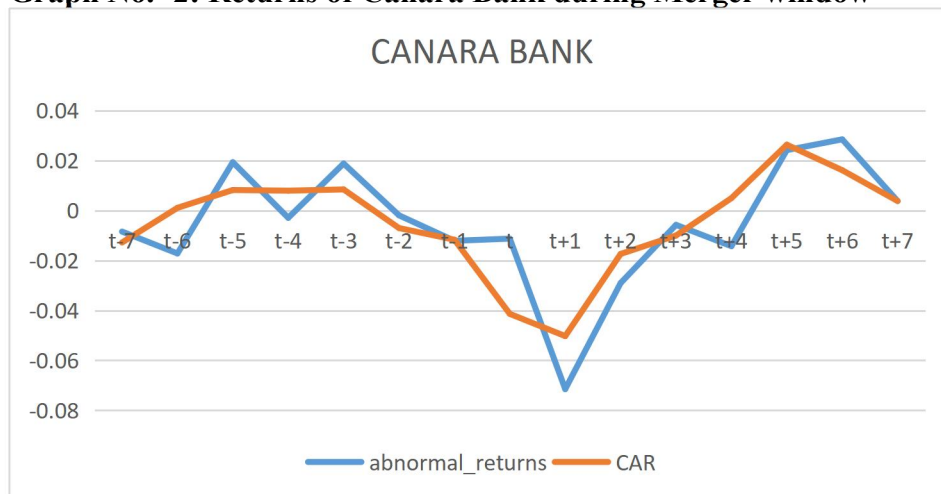
Visualisation of returns

Graph No.- 1 Returns of Punjab National Bank during Merger window



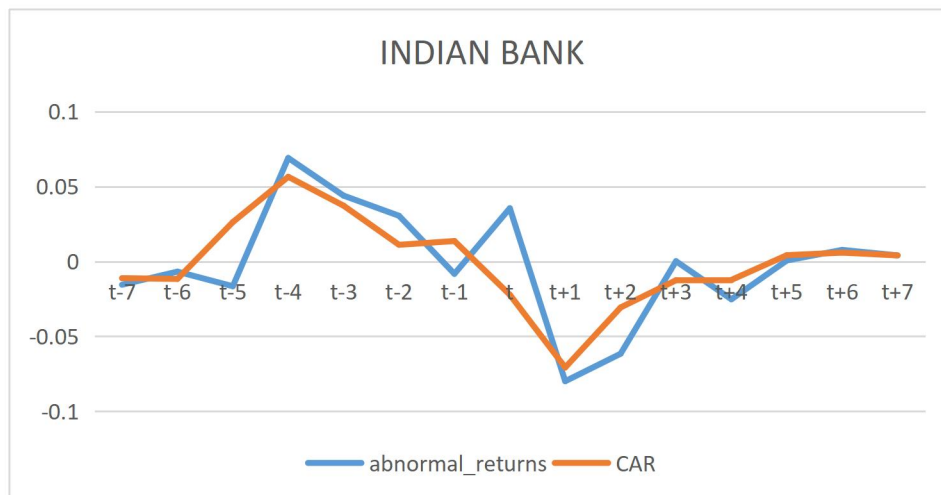
Graph 1 visualizes the AR and CAR of Punjab National Bank across the merger announcement event window ($t-7$ through $t+7$). The graph shows fluctuating returns during the window. The event window indicates short-term turbulence as the graph shows a sudden fall on day $t+1$ which might be a reaction of the investors to the announcement. It also shows a return of confidence as the market digested the news. Rebound in AR and CAR over day $t+4$ suggests that investors gradually recognized potential positive synergies.

Graph No.- 2: Returns of Canara Bank during Merger window



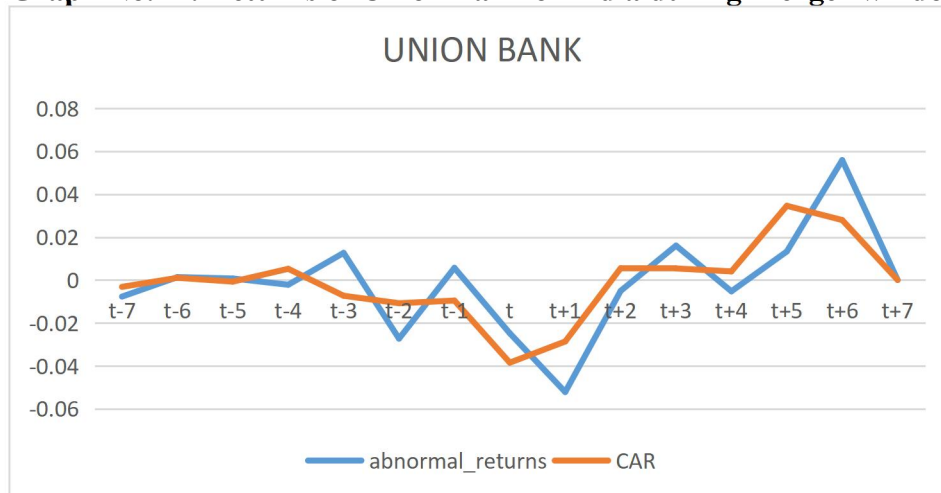
Graph 2 visualizes the AR and CAR of Canara Bank across the merger announcement event window ($t-7$ through $t+7$). Just like Punjab National Bank this graph also shows fluctuating returns during the window. The graph shows a sudden fall on day $t+1$ indicating reaction of the investors to the announcement. The also show a rise in the post-merger period indicating a positive sentiment among investors.

Graph No.- 3: Returns of Indian Bank during Merger window



Graph 3 visualizes the AR and CAR of Indian Bank across the merger announcement event window ($t-7$ through $t+7$). The graph shows inconsistency in returns during the window. The graph shows a rise in return just before the event day but suddenly fall on next day which might be a reaction of the investors to the announcement. The returns in the post merger period remains low, which might be an indication of negative sentiments.

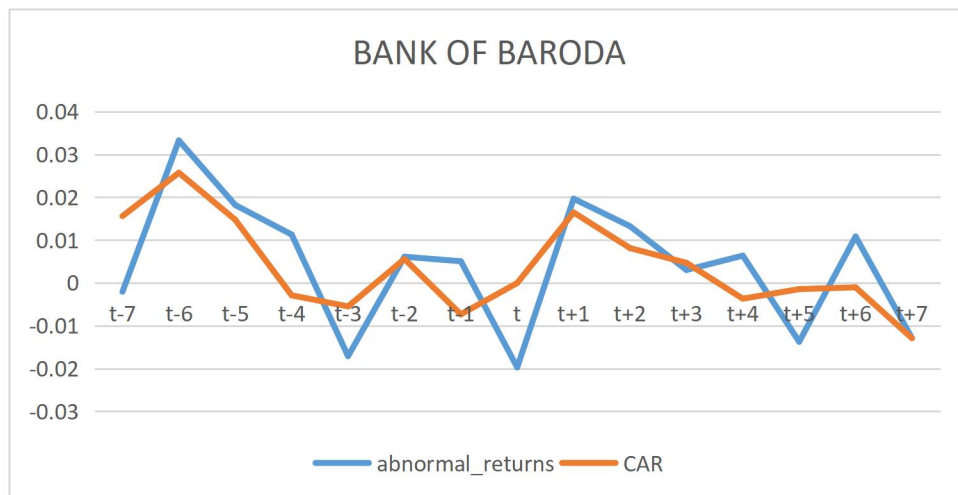
Graph No.- 4: Returns of Union Bank of India during Merger window



Graph 4 visualizes the AR and CAR of Union Bank of India across the merger announcement event window ($t-7$ through $t+7$). The graph shows lower returns before the merger announcement and higher returns in the later period. The graph shows a rise in returns after the fall on the event day. The rise might be an indication of positive sentiments of the investors as result of the merger.

Bank of Baroda

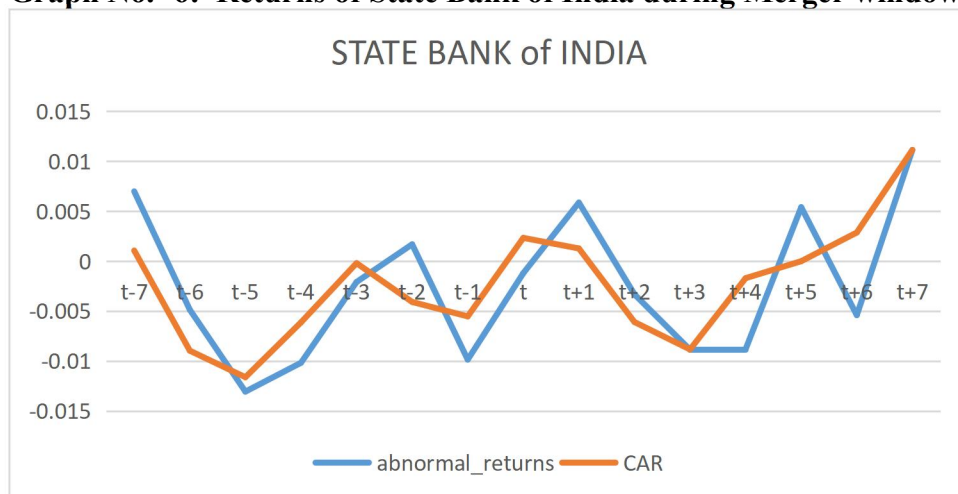
Graph No.- 5: Returns of Bank of Baroda during Merger window



Graph 5 exhibits a classic V-shaped pattern with inconsistent returns in the pre merger period. There was a sharp drop on event day and in the immediate days after the announcement day. In the post-event also the graph shows a gradual fall indicating negative investor's sentiments.

State Bank of India

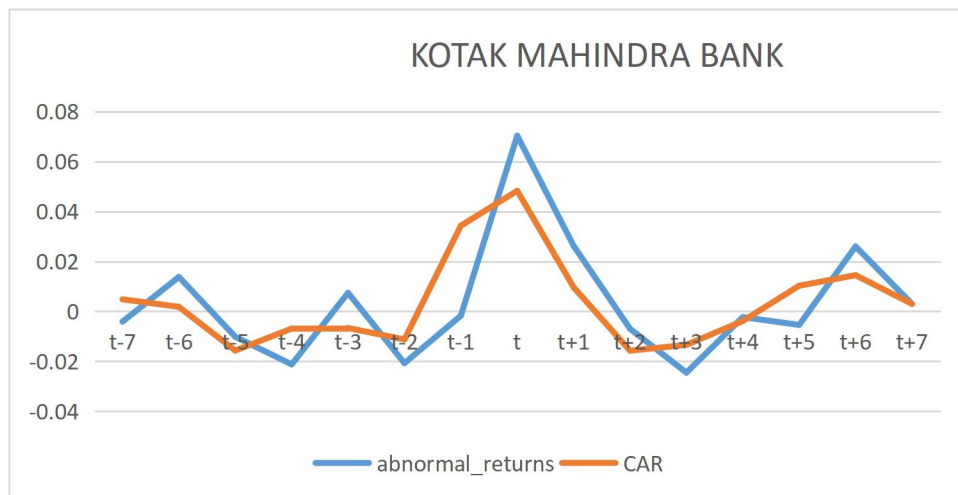
Graph No.- 6: Returns of State Bank of India during Merger window



Graph 6 visualizes the AR and CAR of State Bank of India across the merger announcement event window (t-7 through t+7). The graph shows high volatility in returns. Interestingly returns fall before the announcement and rise on the event day. The graph also shows a fall in returns after the event day and then gradual recovery after it. The high fluctuations might be an indication of uncertainty among the investors as result of the merger.

Kotak Mahindra Bank

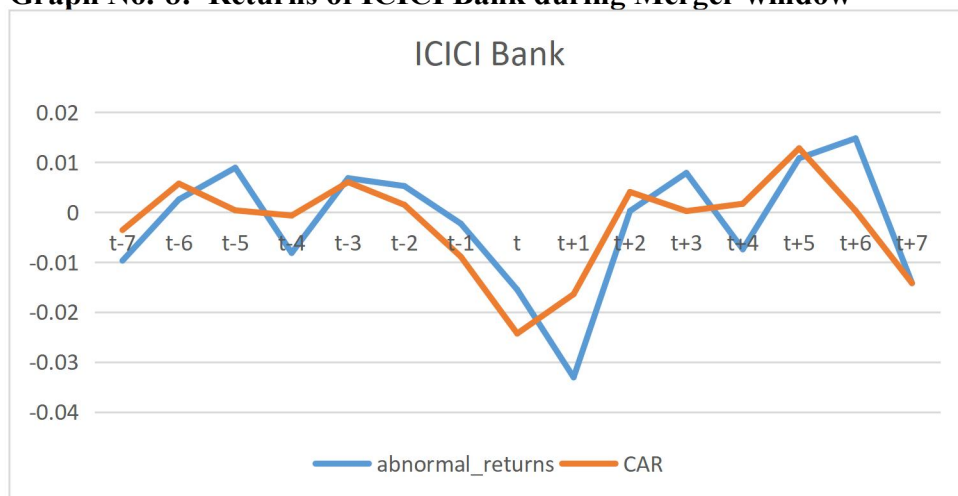
Graph No.- 7: Returns of Kotak Mahindra Bank during Merger window



Graph 7 visualizes the AR and CAR of Kotak Mahindra Bank across the merger announcement event window ($t-7$ through $t+7$). Post-merger announcement returns typically normalize after the initial AR spike, consistent with academic reports that short-term announcement gains taper quickly. The strong investor enthusiasm shows jump in the event day, reflecting belief in strategic upside. However, it pulls back to normal in early post-event day and then in later post – event period is stabilization.

ICICI Bank

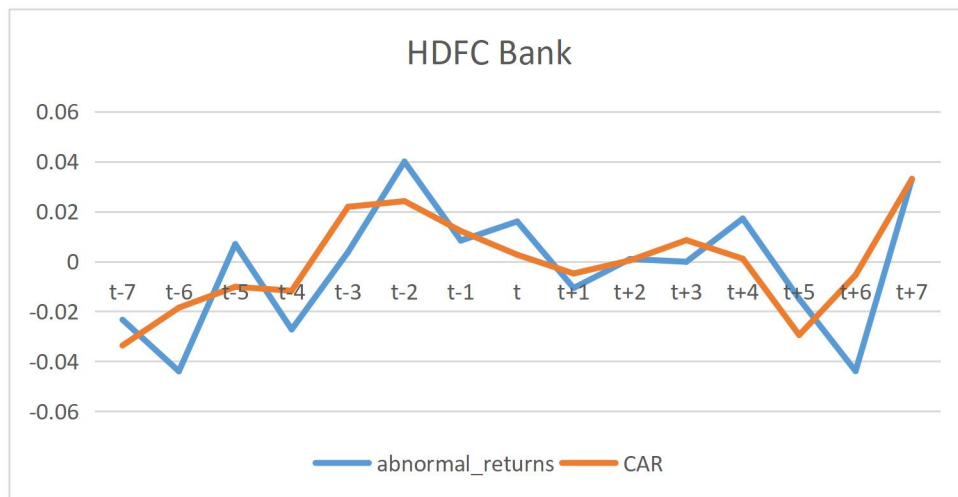
Graph No.-8: Returns of ICICI Bank during Merger window



Graph 8 visualizes the AR and CAR of ICICI Bank across the merger announcement event window ($t-7$ through $t+7$). The graph shows a significant negative stock market reaction in the early merger period which stabilizes later on. Fall in CAR in the final days indicates a negative outcome from short-term investor discomfort.

HDFC BANK

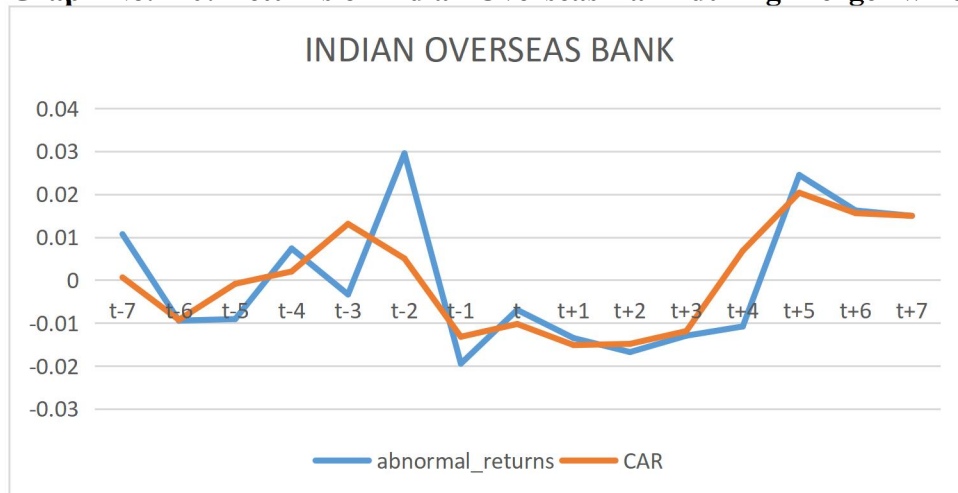
Graph No.- 9: Returns of HDFC Bank during Merger window



Graph 9 visualizes the AR and CAR of HDFC Bank across the merger announcement event window ($t-7$ through $t+7$). The event day has modest positive reaction followed by a strong late window rally suggesting investors responded well once they assessed synergy potential. The final rise in CAR indicates positive short-term market sentiment, aligning with long-term strategic improvement reported post-merger.

Indian Overseas Bank

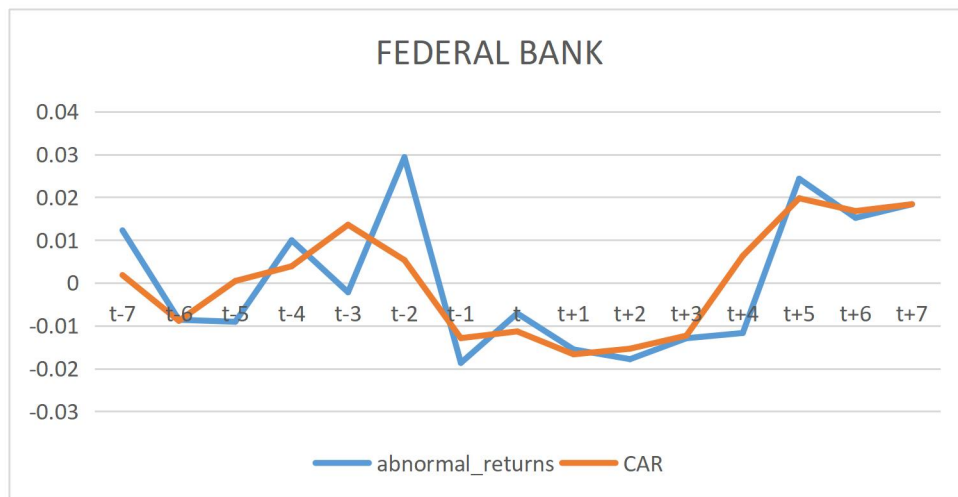
Graph No.- 10: Returns of Indian Overseas Bank during Merger window



Graph 10 visualizes the AR and CAR of Indian Overseas Bank across the merger announcement event window ($t-7$ through $t+7$). Pre-event volatility with rumor-driven spikes and Announcement-day dip signifies initial caution. Despite a negative reaction in the initial post-merger period, the recovery in the later suggests the market came around to the belief that the merger would strengthen Indian Overseas Bank in the medium term.

Federal Bank

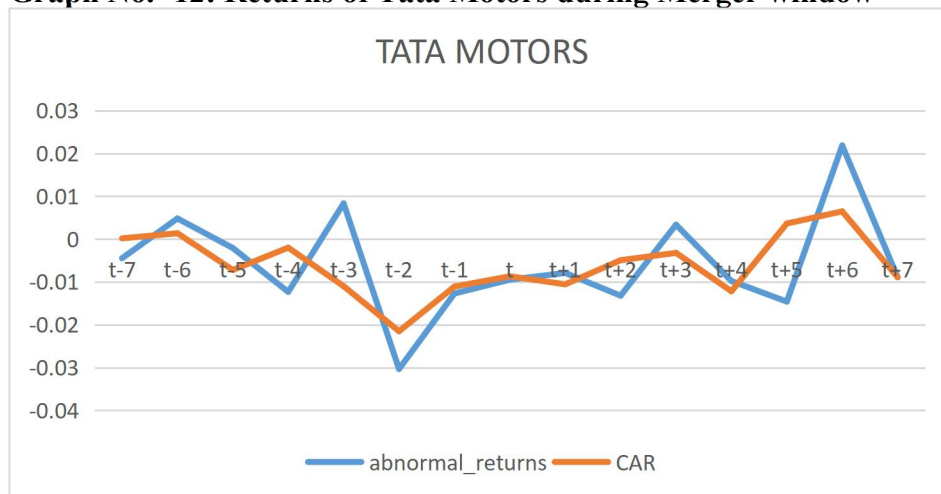
Graph No.- 11: Returns of Federal Bank during Merger window



Graph 11 visualizes the AR and CAR of Federal Bank across the merger announcement event window (t-7 through t+7). The announcement triggered a small negative reaction, likely driven by uncertainty. Even though the returns remain low in the early days of the merger a strong recovery is seen afterwards, leading to a modest cumulative gain. It suggests that the Investor sentiment was mixed ahead of the merger announcement, with alignment pivoting between optimism and cautious stance.

Tata Motors

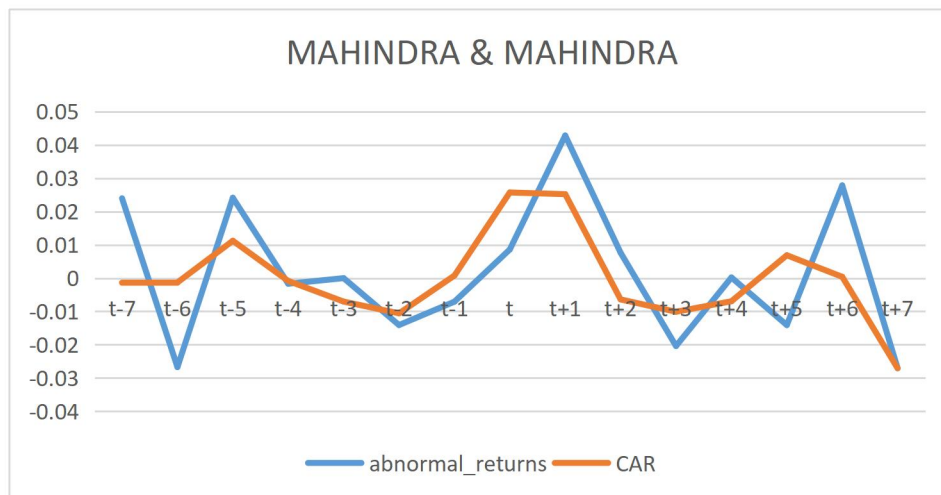
Graph No.- 12: Returns of Tata Motors during Merger window



Graph 12 visualizes the AR and CAR of Tata Motors across the merger announcement event window (t-7 through t+7). The graph falls before the announcement and remains low in the early merger period suggesting that the market didn't cheer the announcement news, it also shows a slightly negative price impact. No strong rebound was noticed in the later period as well.

Mahindra & Mahindra

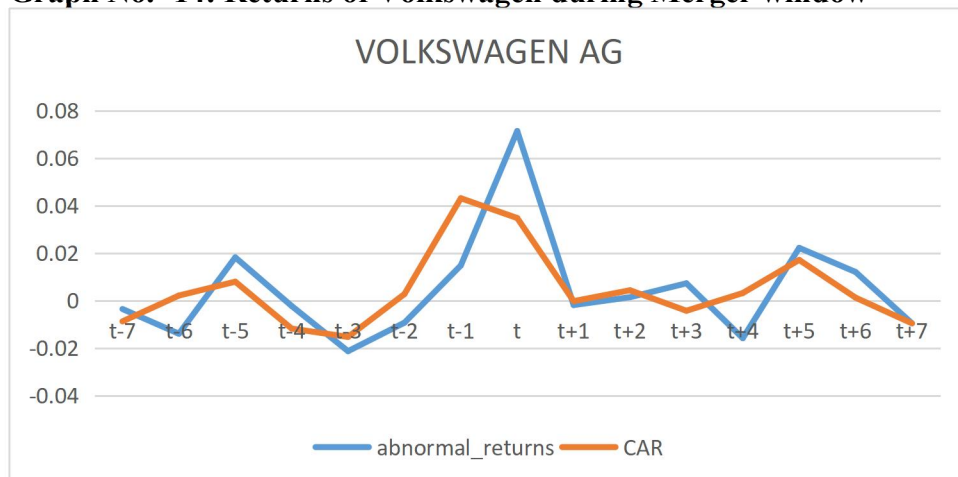
Graph No.- 13: Returns of Mahindra & Mahindra during Merger window



Graph 13 visualizes the AR and CAR of Mahindra & Mahindra across the merger announcement event window ($t-7$ through $t+7$). The announcement triggered strong immediate positive returns, reflecting confidence in the acquisition's strategic merit. However, subsequent days saw reversal and volatility, with the window closing on a slightly negative net outcome. Overall, while the event-day market response was optimistic, investor confidence wasn't sustained—likely due to integration and financial execution uncertainties.

Volkswagen

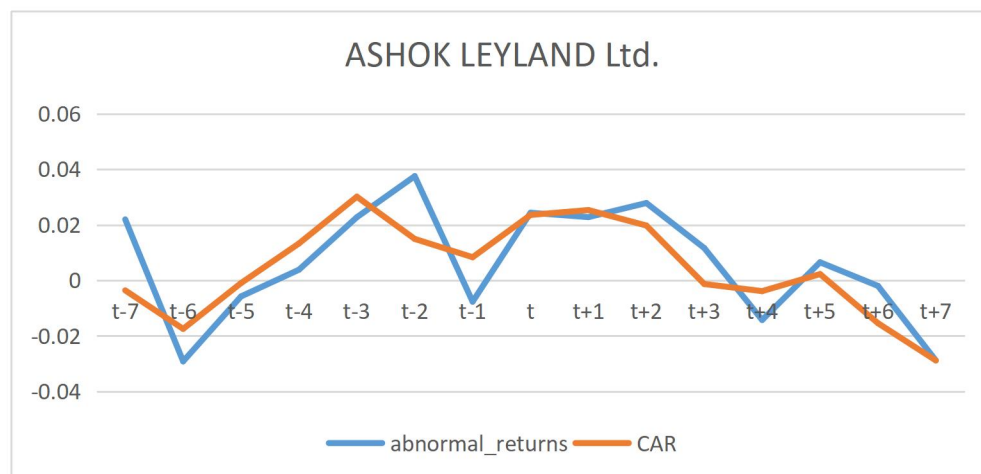
Graph No.- 14: Returns of Volkswagen during Merger window



Graph 14 visualizes the AR and CAR of Volkswagen across the merger announcement event window ($t-7$ through $t+7$). The graph shows a sharp announcement-day spike in AR and CAR, demonstrating strong initial optimism. Followed by a short correction as CAR declines over time suggesting that the investors initially welcomed the merger but mixed sentiment resulted in the subsequent drift.

Ashok Leyland Limited

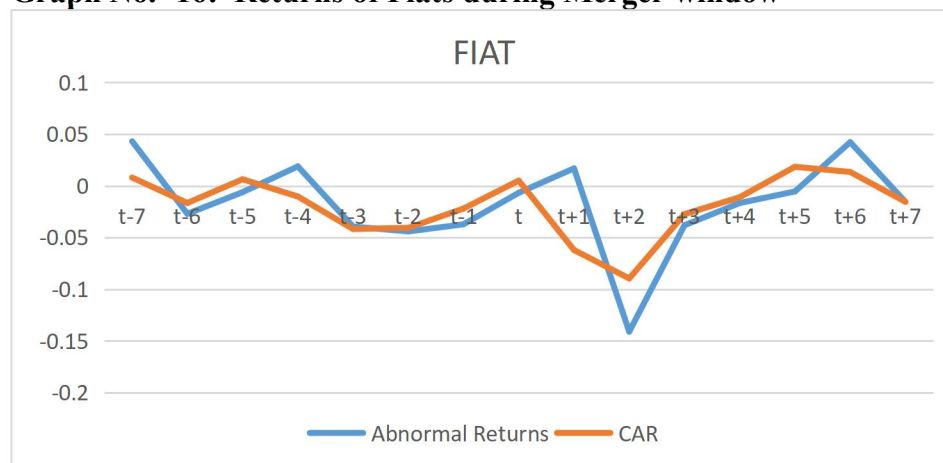
Graph No.- 15: Returns of Ashok Leyland during Merger window



Graph 15 visualizes the AR and CAR of Ashok Leyland across the merger announcement event window ($t-7$ through $t+7$). The graph shows a sudden fall on the day before the announcement and then a jump on announcement indicating a positive sentiment among the investors. It shows an initial positive shock on the announcement and a Short-lived optimism, followed by gradual investor retrenchment. By day $+7$, returns turn negative indicating lack of sustained confidence. Overall, the market displayed cautious optimism followed by growing skepticism, likely due to concerns about dilution and loss absorption.

Fiat

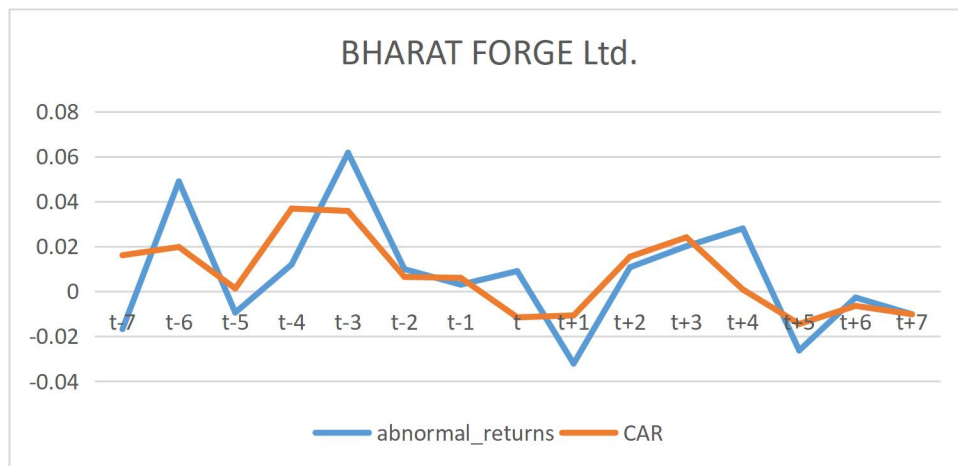
Graph No.- 16: Returns of Fiats during Merger window



Graph 16 visualizes the AR and CAR of Fiat across the merger announcement event window ($t-7$ through $t+7$). The graph shows an overall stable returns pattern. The returns fall after the announcement but pulls back to normal on the next day. It suggests that even though investors react negatively to the announcement immediately, the merger had no impact on the overall returns.

Bharat Forge Limited

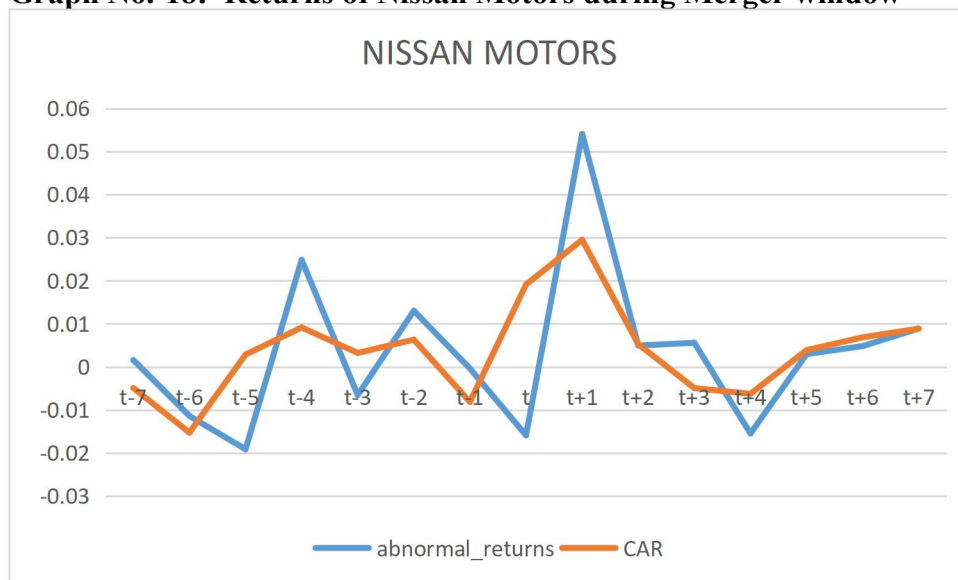
Graph No.- 17: Returns of Bharat Forge during Merger window



Graph 17 visualizes the AR and CAR of Bharat Forge across the merger announcement event window (t-7 through t+7). The graph shows a gradual fall in the returns during the event window, it starts falling before the announcement, rises afterwards and falls again. Overall, it suggests that the announcement generated brief positive reaction, but the initial enthusiasm dissipated, leaving a slightly negative cumulative return by the end.

Nissan Motor Co. Ltd

Graph No.-18: Returns of Nissan Motors during Merger window



Graph 18 visualizes the AR and CAR of Nissan Motors across the merger announcement event window (t-7 through t+7). The graph initially dips before the announcement then suddenly takes a jump on the merger day indicating positive reaction among the investors. Further it falls back to normal. The graph suggests sentiment was uncertain and investor confidence improved quickly, resulting in a modest net gain by the end of the event window.

Paired t test, Wilcoxon test, Sign test

The table 8 shows the results of the Paired t-test, Wilcoxon Signed-Rank Test, and Sign Test of the selected banking companies. The paired t-test evaluates whether the mean abnormal return before and after the event is significantly different. None of the banks show significant results at 5% level of significance. Among all 11 banks, only Indian Bank approaches significance, with a t-statistic of 2.33124 and a p-value of 0.05854, indicating a marginally significant effect at the 10% level. This suggests that Indian Bank may have experienced a notable mean shift in returns around the event. All other banks report p-values well above 0.1, indicating no statistically significant mean difference in abnormal returns. This implies that while some banks may exhibit trends graphically, these are not statistically consistent across the window.

The Wilcoxon test is a non-parametric alternative that checks for median differences in paired data. The test results for all banks are statistically insignificant, with p-values ranging from 0.25238 to 0.97796. Even Indian Bank, which had a borderline result in the t-test, shows a Wilcoxon p-value of 0.93408, suggesting the median returns did not shift significantly, and hence the result from the t-test may have been influenced by outliers or volatility. The consistency in insignificant results across all banks reinforces the finding that the event did not lead to broad-based, median-level changes in abnormal returns across the sample.

Table no.- 8: Results of Paired t test, Wilcoxon test, Sign test of Banking companies

Banks	Paired t test	p-value	Wilcoxon Test	p-value	Sign Test	p-value
Punjab National Bank	-0.02085	0.98404	53.0	0.71972	No. of Positive R-9 Non Zero R- 15	0.71972
Canara Bank	0.73940	0.48757	49.0	0.56140	No. of Positive R-5 Non Zero R- 15	0.56140
Indian Bank	2.33124	0.05854	58.0	0.93408	No. of Positive R-8 Non Zero R- 15	0.93408
Union Bank of India	-0.38608	0.71275	58.0	0.93408	No. of Positive R-5 Non Zero R- 15	0.93408
Bank of Baroda	0.70771	0.50566	44.0	0.38940	No. of Positive R-10 Non Zero R- 15	0.38940
State Bank of India	-1.17739	0.28362	39.0	0.25238	No. of Positive R-5 Non Zero R- 15	0.25238
Kotak Mahindra Bank	0.01949	0.46307	59.0	0.97796	No. of Positive R-6 Non Zero R- 15	0.97796
ICICI Bank	0.84159	0.43227	53.0	0.71972	No. of Positive R-8 Non Zero R- 15	0.71972
HDFC Bank	-0.14295	0.89100	56.0	0.84692	No. of Positive R-8 Non Zero R- 15	0.84692
Indian	0.07657	0.94145	59.0	0.97796	No. of Positive R-6	0.67877

Overseas Bank					Non Zero R- 15	
Federal Bank	0.20243	0.84626	58.0	0.93408	No. of Positive R-6 Non Zero R- 15	0.93408

The sign test counts the number of positive abnormal returns (ARs) in the event window and compares it against the total number of non-zero observations to test if the proportion is significantly different from 0.5. Like the previous two tests, the sign test also yields no statistically significant results for any bank. Most banks had 6 to 10 positive ARs out of 15, but these proportions fall within random variation limits. Indicating the results are not significantly different from chance. This reinforces the earlier conclusion that the event did not create a systematic directional bias in the abnormal returns of the majority of banks.

Table No.- 9: Summary table of Banking companies

Sl No.	Banks	Paired t Test	Wilcoxon Test	Sign Test
1	Punjab National Bank	Non-Significant	Non-Significant	Non-Significant
2	Canara Bank	Non-Significant	Non-Significant	Significant
3	Indian Bank	Significant	Non-Significant	Non-Significant
4	Union Bank of India	Non-Significant	Non-Significant	Non-Significant
5	Bank of Baroda	Non-Significant	Non-Significant	Non-Significant
6	State Bank of India	Non-Significant	Non-Significant	Non-Significant
7	Kotak Mahindra Bank	Non-Significant	Non-Significant	Non-Significant
8	ICICI Bank	Non-Significant	Non-Significant	Non-Significant
9	HDFC Bank	Non-Significant	Non-Significant	Non-Significant
10	Indian Overseas Bank	Non-Significant	Non-Significant	Non-Significant
11	Federal Bank	Non-Significant	Non-Significant	Non-Significant

Table 9 shows summary of Paired t test, Wilcoxon test, Sign test Results. No acquiring bank shows statistically significant abnormal return effects based on any of the three tests. This indicates that, in this sample and window, merger announcements did not systematically move stock returns for acquiring banks. Even though Indian Bank shows marginal t-test result, it does not hold under median and sign tests, suggesting it might be due to skew or outlier effects rather than a robust event signal.

Table No.- 10: Results of Paired t test, Wilcoxon test, Sign test of Automobile Companies

Automobile Companies	Paired t test	p-value	Wilcoxon Test	p-value	Sign Test	p-value
TATA Motors	-0.30272	0.77232	30.0	0.05535	No. of Positive R-4 Non Zero R- 15	0.05535
Mahindra & Mahindra	-0.22312	0.83083	57.0	0.89038	No. of Positive R-7 Non Zero R- 15	0.89038
Volkswagen	-0.52989	0.61521	55.0	0.80395	No. of Positive R-7 Non Zero R- 15	0.80395

Ashok Leyland Limited	0.23372	0.82297	43.0	0.82297	No. of Positive R-9 Non Zero R- 15	0.82297
Fiat	0.56675	0.59143	61.0	0.48738	No. of Positive R-6 Non Zero R- 15	0.48738
Bharat Forge Limited	0.68151	0.27428	44.0	0.27428	No. of Positive R-9 Non Zero R- 15	0.27428
Nissan Motor Co. Ltd	0.03538	0.03538	53.0	0.03538	No. of Positive R-9 Non Zero R- 15	0.03538

The table 10 shows merger announcement impacts on automobile acquirer firms, using three distinct statistical tests: the parametric test- Paired t test, and non-parametric test- Wilcoxon signed-rank (median) test, and Sign test (directional). These tests assess whether the abnormal returns (AR) and cumulative abnormal returns (CAR) exhibit statistically meaningful patterns over the ± 7 -day announcement window.

The results of Paired t test for nearly all banks were found to be insignificant at 5% and 10% level of significance except Nissan Motors has p-value (0.03538) was found to be significant at 5% level of significance.

Tata Motors' sign test p- value is 0.05535 which means null hypothesis is rejected and alternative hypothesis is accepted. Mahindra & Mahindra's sign test p- value is 0.89038 which means null hypothesis is rejected and alternative hypothesis is accepted. Volkswagen sign test p- value is 0.80395 which means null hypothesis is rejected and alternative hypothesis is accepted. Ashok Leyland Limited sign test p- value is 0.82297 which means null hypothesis is rejected and alternative hypothesis is accepted. Fiat sign test p- value is 0.48738 which means null hypothesis is rejected and alternative hypothesis is accepted. Bharat Forge limited' sign test p- value is 0.27428 which means null hypothesis is rejected and alternative hypothesis is accepted. Nissan Motors sign test p- value is 0.03538 which means null hypothesis is rejected and alternative hypothesis is accepted.

The results of Wilcoxon test for almost all automobile companies p-value is more than the significance level which means null hypothesis is rejected and alternative hypothesis is accepted except in case of Tata motors p-value was (0.05535) therefore, we accepted the null hypothesis.

Table No. - 11: Summary table of Automobile Companies

SI No.	Automobile Companies	Paired t Test	Wilcoxon Test	Sign Test
1	TATA Motors	Non-Significant	Significant	Significant
2	Mahindra & Mahindra	Non-Significant	Non-Significant	Non-Significant
3	Volkswagen	Non-Significant	Non-Significant	Non-Significant

4	Ashok Leyland Limited	Non-Significant	Non-Significant	Non-Significant
5	Fiat	Non-Significant	Non-Significant	Non-Significant
6	Bharat Forge Limited	Non-Significant	Non-Significant	Non-Significant
7	Nissan Motor Co. Ltd	Significant	Significant	Significant

Most automobile acquirer firms did not exhibit statistically significant abnormal returns in response to their merger announcements, across all tests. Nissan Motor Co. Ltd. stands out in both the Wilcoxon median test and Sign test suggest statistically significant positive CAR behavior, implying persistent positive reaction in the event window. Tata Motors shows weak, borderline evidence of abnormal reaction, but the effect is not robust across tests.

Limitation and Future scope of the study

The study can be done by expanding the event window (e.g. ± 30 or ± 60 days) to test for longer-term AR and CAR effects. A study can be conducted aggregate abnormal return metrics (AAR/CAAR) over the full window. This study's findings are limited to the short-term reaction to merger announcements. A more detailed analysis can investigate the long-term performance of these firms after the merger's effective date to capture any sustained operational impacts.

Conclusion

The event study methodology has been widely used to assess the impact of M&As in the automobile sector. The findings from various studies indicate that while M&As often result in positive short-term wealth effects, the long-term performance is more mixed. The success of M&As depends on several factors, including the financial strategy of the acquirer, the integration process, and the cultural compatibility between the merging firms. As the automobile sector continues to evolve, understanding the determinants of M&A success will be crucial for companies seeking to achieve sustainable growth through consolidation. In the selected various automobile companies, the merger announcement has no significance change except in the cases of Tata Motors and Nissan Motors. In case of banking sector, all the selected banks in the merger announcement period has short-lived market reaction with initial volatility. Many event-study papers show that abnormal returns dissipate within 4–7 days of post-announcement. But in the maximum above cases in both banking and automobile sectors there were no significance change in the 15 days' window of the merger announcement period as there was short-lived market reaction with initial volatility followed by a quick correction, leading to a non-significant cumulative impact in most cases.

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