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University Road, Kolhapur - 416004, Maharashtra State, India.

website : www.siberindia.edu.in

E-mail : editorsajmr@siberindia.edu.in

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Chhatrapati Shahu Institute of Business Education & Research (CSIBER)

(An Autonomous Institute)

University Road, Kolhapur - 416004, Maharashtra State, India

Phone : 0231-2535706 / 2535707

website : www.siberindia.edu.in

E-mail : editorsajmr@siberindia.edu.in



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Professor and Head, Department of Journalism and Science Communication, School of Linguistics and Communication, Madurai Kamaraj University, Madurai, Tamil Nadu, India

Short Term Impact of Acquisition on Stock Returns- A Study Based on BSE Listed Select Companies In India

Subhajit Bhadra

Ph.D. Research Scholar, Department of Management and Marketing, West Bengal State University, West Bengal, India.

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Ashoke Mondal

Ph.D. Research Scholar, Department of Management and Marketing, West Bengal State University, West Bengal, India.

Short Term Impact of Acquisition on Stock Returns- A Study Based on BSE Listed Select Companies in India

Subhajit Bhadra

Ph.D. Research Scholar. Department of
Management and Marketing, West Bengal State
University, West Bengal, India.

Dr. Ashoke Mondal

Ph.D. Research Scholar. Department of
Management and Marketing, West Bengal
State University, West Bengal, India.

Abstract

In this research paper, an event study approach has been used to investigate the impact of the acquisition of shares on the returns of acquirer companies that are listed in the Bombay Stock Exchange database. For that purpose, 14 acquirer companies have been selected from Prowess IQ database. This study aims to find whether any significant impact is there or not after the acquisition on the acquirer companies with the help of event study methodology. The results of t test showed that abnormal returns (AR) of the acquirer companies are statistically significant just after the event date. Cumulative average abnormal returns (CAAR) of acquirer companies were also increasing very quickly after the acquisition of shares. After that, cumulative average abnormal returns were fluctuating and tend to move normally throughout the event window. Findings of the study revealed that acquisition of shares have a short-term impact on the returns of acquirer companies.

Keywords: Abnormal Return, Acquisition, Event Study, Market Model, Sensex.

Introduction

From the history, it is seen that different event like World war-II, Russia-Ukraine war, covid-19, the Ebola virus, etc. have a tremendous impact not only on society but also on our economy. Volatility of stock market has also increased during that time period due to panic among investors. The share prices of the companies showed a fluctuating trend when major events happened in the national and international market. The impact of international issues is much wider than the impact of national issues. International issues have an impact on the economy of different countries of all over the world for a long period of time but impact of national issues is limited to economy of the specific country. The impact of a particular event and its continuity period depend on the nature of the event. For instance, World war-II had a larger and longer time-period impact on the whole of the world. Similarly, corporate events like acquisition, merger, bonus issue, declaration of dividend have also an impact on the share prices of different companies. Basically, acquisition is a way for those companies whose target is to expand their operations and gain market share. It is expected that performance of acquirer companies would be influenced by acquisition event. It is also observed that mergers and acquisitions did not improve the performance of companies in case of cross -border mergers and acquisitions as compared to domestic mergers and acquisitions Liu et al., (2021).

Long-term impacts of any events have been measured through different parametric and non-parametric tests like the paired t-test, Wilcoxon signed rank test, Data envelopment analysis, etc., but short-term impact can be measured through the event study methodology. Mall and Gupta, (2019) used event study methodology for their study and they found no such abnormality in abnormal return due to merger event. In another study Rani et al., (2015) have noticed positive abnormal return before the event date and negative abnormal return after the event date. But our study focuses on the within-country or domestic acquisitions only. In this context, main objectives of the study to find out the short-term impact of the acquisition event on the return of acquirer companies that are listed in the BSE. The findings of the study may help researchers and the practitioners in their decision making.

Review of Literature

A large number of studies have been conducted related to this topic within India and outside India. They have judged the short term and long-term impact of merger and acquisition on company performances.

To compare the impact of cross-border merger and domestic merger, Liu et al., (2021) have selected 86 cross-border merger and 81 domestic merger cases that have taken place within 2007 to 2012. For that purpose, they have considered 5 years before and 5 years after dataset and also used least square regression method for analysis purpose for the selected companies. Findings of their study revealed that domestic merger performs better than cross border mergers in the aspect of financial performance.

By using the event study methodology Pandey & Kumari (2020) examined the performance of 14 Indian and American banks (the acquiring firm) by taking the dataset from 2010 to 2019. According to the study's findings, Indian banks' share prices are more sensitive than American banks' share prices. The CAAR of the U.S. banks has been changed after the event date, whereas the remarkable changes have been noticed in the CAAR of the Indian bank throughout the event window.

Impact of merger and acquisition on firms' performance in different time period has measured by Aggarwal & Garg (2019) by taking data of 68 public limited non-banking firms. They conducted stagewise analysis along with paired t-test on 5 years dataset and it was found that acquirer service sector firms performed better than manufacturing sector firms in India and the analysis also showed that merger and acquisition has impacted profitability and liquidity of non-banking firms rather than solvency of the non-banking firms.

Chavda & Raval (2019) has compared the impact of horizontal, vertical and conglomerate merger by using ratio analysis or proportion analysis and it was found that some ratios did not improve firms' performance.

Mall and Gupta (2019) had analysed the impact of merger and acquisition on 428 Indian companies (other than the financial and agricultural sector) using event study methodology. The findings of the study showed that stock return abnormality was not caused by merger and acquisition and they concluded that shareholders did not receive abnormal return due to merger events.

Impact of merger and acquisition on Indian pharmaceutical sector was analysed by Kanimozhi & Pavathaarni (2019) by taking the data of 6 years (3 years pre-merger and 3 years post-merger). For the analysis purpose they have used ratio analysis and it was found that positive impact has been reflected on some selected indicators of the companies.

Impact of mergers and acquisitions on profitability was measured by Mishra (2019) in post liberalization period by using GMM method and they have considered different aspects such as market structure, inter industry variation, foreign technology purchase, market and distribution etc. and the findings of the study revealed that neither market structure nor merger improved the financial performance of the firm but capital intensity, distribution related efforts and information technology advancement influenced the financial performance either positively or negatively.

In their study, Chen et al., (2018) showed that acquisition result was more fruitful in terms of synergies, goodwill when target firms' have shown more positive result in their financial statement at the time of acquisition.

Alhenawi & Stilwell (2017) have shown value creation due to merger not only dependent on target firms' pre-acquisition value but also on dependent on acquirer firms' competencies and financial result. The findings of the study also revealed that successful mergers and acquisitions are statistically significant with internal capital market theory but not with agency theory.

Bi, Z (2016) compared the pre-merger and post-merger performance in terms of liquidity, profitability and solvency by taking select companies from IT sector. The author has analysed the impact of merger on different financial aspects in case of domestic and cross border mergers using descriptive statistics and paired t-test. The findings of the study revealed that no significant change have been noticed after merger in both cases.

For studying the impact on mergers and acquisitions on value, Wu et al., (2016) analysed 180 mergers and acquisitions cases that have taken place between 2002 and 2012 in China using event study methodology. The findings of the study revealed that merger and acquisition activities have significant positive impact during event window (+10, -10) and they identified many other factors such as research and development, mergers and acquisitions experiences that have played vital positive role in value creation.

Rani et al., (2015) investigated long-term performance of the acquiring firm using ratio analysis. In their analysis du-pont analysis have been used for identifying the sources of better long-term post-merger acquisition

return. They conducted a comprehensive ratio analysis of 14 major ratio related to profitability, efficiency, liquidity and leverage on a sample of 305 merger and acquisition. The result showed that there is an improvement in the performance of the acquiring firms in post-merger acquisition period.

Lai et al., (2015) have compared the pre-merger and post-merger performance of banking industry of Malaysia after the year 2000 by using different statistical tools such as DEA, t-statistics and paired sample t-test and they have noticed no such significant improvement in the performance and efficiency of the merged bank after merger and acquisition.

Tripathi & Lamba (2015) have analysed the financial performance of 269 Indian companies that underwent cross-border merger and acquisition during 1998 to 2009 considering industry specific factors, time of acquisition, status of the development of the target economy. They conclude that companies should diversify their portfolio of international exposure and focus of the cross-border merger and acquisition should be given on the location of the Target Company and time of the deal.

Laabs&Schierack (2010) investigated short and long-term effects of merger and acquisition on 230 Indian acquiring companies. In their study, they applied event study methodology and Fama French 3 factor model for examining the wealth effect of horizontal merger and acquisition in the automotive supply industry. From the event study it has been noticed a significant positive improvement in returns of the acquiring companies. The finding of the Fama French 3 factor model revealed 20% value deterioration of the select companies over 3 years.

Zhu & Malhotra (2008) examined the short-term stock performance of 74 Indian companies that acquired US firms during the period 1999 to 2005 using event study methodology. Analysis of the several event windows found that the Indian acquiring firms returns have increased for 2 or 3 days after the merger and acquisition event and after that returns become negative.

Importance of This Study

Majority of the studies have been analysed the long-term impact of merger and acquisition on company performance but this study is conducted to analyse the short-term impact of acquisition of shares on stock return.

The relevance of the study are as follows:

Firstly, the findings of the study may add some knowledge in the domain of knowledge of literature related to merger and acquisition.

Secondly, this study can give investors an overview of the situation that arises before and after the acquisition or related event, its impact and the duration of the impact. It may guide investors in the short-term decision making.

Thirdly, practitioners can manage their portfolio accordingly in those specific stocks during that time period of abnormality and suggest them whether to invest or to divest in those stocks.

Lastly, regulators like RBI, SEBI, and IRDA may take different policy measures based on the impact of the specific event.

Objectives of the Study

The main objectives of the study are:

- To evaluate the short-term impact of the acquisition on stock return and
- To test whether there is any significant difference in the returns during pre-acquisition and post-acquisition period or not?

Research Hypothesis

In this study, we test the following hypothesis:

Null Hypothesis 1 (H_{01}): Average abnormal returns surrounding the event date are close to zero.

Alternative Hypothesis 1 (H_{11}): Average abnormal returns surrounding the event date are different to zero.

Null Hypothesis 2 (H_{02}): There is no significant difference in the average abnormal returns before and after the acquisition period on the listed companies.

Alternative Hypothesis 2 (H_{12}): There is significant difference in the average abnormal returns before and after the acquisition period on the listed companies.

Research Methodology

Research Techniques

To investigate the impact of acquisitions on the BSE listed 14 companies, event study methodology has been used. For that purpose, returns of 14 companies and S&P BSE SENSEX return have been calculated using the following formulas;

Return of the i^{th} security (R_i)= $L_n (P_{it}/P_{it-1})$

Where, P_{it} =closing share price of i^{th} stock at t^{th} day and

Return on market index (R_m)

= $L_n(P_{mt}/P_{mt-1})$.

where, P_{mt} =closing share price of market index at t^{th} day

Here, daily share price data has been selected because it is not possible to measure the immediate effect of the acquisition event on the basis of weekly or monthly data. In the event study methodology, it is investigated that whether abnormal returns on those companies' stock were noteworthy or not during the pre and post-acquisition date or event date. Here, the event date is the date of the announcement of the acquisition by the companies. The occurrence of an acquisition event is expected to have a positive or negative impact on abnormal or excess return. Here, "abnormal or excess return" is the difference between the actual and expected return.

Here, abnormal return =Actual rate of return of i^{th} stock - Expected rate of return of i^{th} stock

$AR_i=R_i-E(R_i)$

Expected return of i^{th} stock ($E(R_i)$)

$$= \alpha_i + \beta_i R_m \quad \dots(1)$$

Where, $i=1,2,\dots,14$

After computing the abnormal return (AR) of each stock, the average abnormal return was calculated. The Average Abnormal Return (AAR) is calculated by averaging estimated abnormal returns across securities or stocks.

Average Abnormal Return Of the i^{th} stock (AAR).

$$= \sum_t^n \frac{AR_i}{n} \quad \dots(2)$$

Where $n=14$

If the acquisition announcement date affects the share price, it is believed that abnormal returns around the acquisition date will be significantly different from zero.

Since, the acquisition does not create an impact rapidly in the average abnormal return, the cumulative average abnormal returns are to be computed for examining the impact of acquisition during pre-acquisition and post-acquisition period.

Cumulative Average Abnormal Return (CAAR) for the period

$$(T_0, T_1) = \sum_{T_0}^{T_1} AR_t \dots (3)$$

If the market is efficient, then it can be assumed that the value of ARR should be zero.

For testing the significance of Average Abnormal Return (ARR), t-test is used.

Sources of Data

Initially, 25 acquirer companies, that acquire shares from January 1, 2023 identified to June 30, 2023, have been identified from the CMIE Database. Out of 25 companies, 14 companies have been selected on the basis of availability of the share price data. The daily closing share prices of 14 companies and the S&P BSE SENSEX have been collected for 211 days before the event date and 30 days after the event date from www.bseindia.com database.

Results, Discussions & Findings

Table 1 represents estimated alpha and beta coefficients, which are estimated based on the return of 180 days of select stocks and return of S&P BSE SENSEX with the help of equation no. (1). These coefficients are used to estimate the expected return and abnormal returns of 14 companies for sixty- one days (thirty days prior to the acquisition date, thirty days post from acquisition date, and the event date itself).

The names of the acquirer companies and their beta and alpha estimator are given in Table 1.

Table 1: List of Acquirer Companies Listed in BSE

Srl.No.	Name of acquirer companies	Estimated beta	Estimated alpha
1	Allcargo Logistics Ltd.	1.09458	0.127422
2	Gensol Engineering Ltd.	0.531986	0.689378
3	Greaves Cotton Ltd.	1.630817	-0.20577
4	Happiest Minds Technologies Ltd.	0.945164	-0.14098
5	Housing Development Finance Corpn. Ltd.	1.313804	0.024722
6	India Grid Trust	0.26636	-0.03673
7	J K Cement Ltd.	0.959491	0.081852
8	Kotak Mahindra Bank Ltd.	0.857122	0.007334
9	Mahanagar Gas Ltd.	0.819745	0.056523
10	S J S Enterprises Ltd.	0.807577	-0.08554
11	Samvardhana Motherson Intl. Ltd.	1.187857	-0.14313
12	Sun Pharmaceutical Inds. Ltd.	0.60505	0.041354
13	Uno Minda Ltd.	0.678456	0.049711
14	Vedanta Ltd.	1.238197	0.004183

Source: Data collected and compiled by the researchers

Table 2 indicates the average abnormal return and cumulative average abnormal return computed using equation no. (2) and equation no. (3) for 61 days. It also showed the average abnormal return, cumulative average abnormal return along with the t statistics and the level of significance. From the following table, it has been revealed that t statistics for average abnormal return were not significant before the event date but the average abnormal returns were significant at the event date and just following the event date at 5% level. So, it can be concluded that null hypothesis is rejected which indicates that average abnormal return after the event date is different from zero. It showed the presence of abnormality in the market after the acquisition. Although, average abnormal returns on the t+20, t+28 days were significant at the 5% level, it may be due to any other reason. Cumulative average abnormal returns were showing negative values just before the acquisition date but after the event date or acquisition date, cumulative average abnormal returns were increasing up to t+4 days (it is shown in the Figure 1). It also depicted that there was a short-term impact of acquisition on stock return.

Table 2: Daily Average abnormal Returns (ARR) and Cumulative Average Abnormal Returns (CAAR) for Pre 30 days and Post 30 days of the Acquisition event of BSE Listed 14 Companies

Day t	Average Abnormal Return	t-statistics	Level of significance	Null Hypothesis test status	Cumulative Average Abnormal Return (CAAR)
-30	-0.16628	-0.47605	0.641943	Accept Null Hypothesis H_{01}	-0.16628
-29	-0.01564	-0.03462	0.972906	Accept Null Hypothesis H_{01}	-0.18192
-28	0.011777	0.037927	0.970322	Accept Null Hypothesis H_{01}	-0.17014
-27	-0.18061	-0.72793	0.479565	Accept Null Hypothesis H_{01}	-0.35075
-26	-0.2094	-0.66725	0.516285	Accept Null Hypothesis H_{01}	-0.56015
-25	0.047659	0.216835	0.831703	Accept Null Hypothesis H_{01}	-0.51249
-24	0.409542	0.90011	0.384433	Accept Null Hypothesis H_{01}	-0.10295
-23	0.201172	0.297922	0.770471	Accept Null Hypothesis H_{01}	0.098225
-22	0.335372	1.085923	0.29724	Accept Null Hypothesis H_{01}	0.433597
-21	-0.06093	-0.14486	0.887042	Accept Null Hypothesis H_{01}	0.372669
-20	0.142379	0.222046	0.827728	Accept Null Hypothesis H_{01}	0.515047
-19	-0.11369	-0.21157	0.835719	Accept Null Hypothesis H_{01}	0.401358
-18	-0.6143	-1.46169	0.167576	Accept Null Hypothesis H_{01}	-0.21294
-17	0.637978	1.677499	0.11731	Accept Null Hypothesis H_{01}	0.425033
-16	0.056079	0.176857	0.862346	Accept Null Hypothesis H_{01}	0.481112
-15	-0.02161	-0.07465	0.94163	Accept Null Hypothesis H_{01}	0.459506
-14	-0.96649	-1.18003	0.259133	Accept Null Hypothesis H_{01}	-0.50699
-13	-0.14899	-0.33857	0.740339	Accept Null Hypothesis H_{01}	-0.65597
-12	-0.42138	-0.82516	0.424166	Accept Null Hypothesis H_{01}	-1.07736
-11	0.056872	0.16743	0.869608	Accept Null Hypothesis H_{01}	-1.02048
-10	-0.09733	-0.16027	0.875135	Accept Null Hypothesis H_{01}	-1.11782
-9	0.224567	0.547114	0.593569	Accept Null Hypothesis H_{01}	-0.89325
-8	-0.10303	-0.35781	0.726229	Accept Null Hypothesis H_{01}	-0.99628
-7	0.292419	0.548653	0.592542	Accept Null Hypothesis H_{01}	-0.70386
-6	-0.45484	-1.66842	0.119125	Accept Null Hypothesis H_{01}	-1.15871
-5	0.217183	0.66316	0.518815	Accept Null Hypothesis	-0.94152

				H ₀₁	
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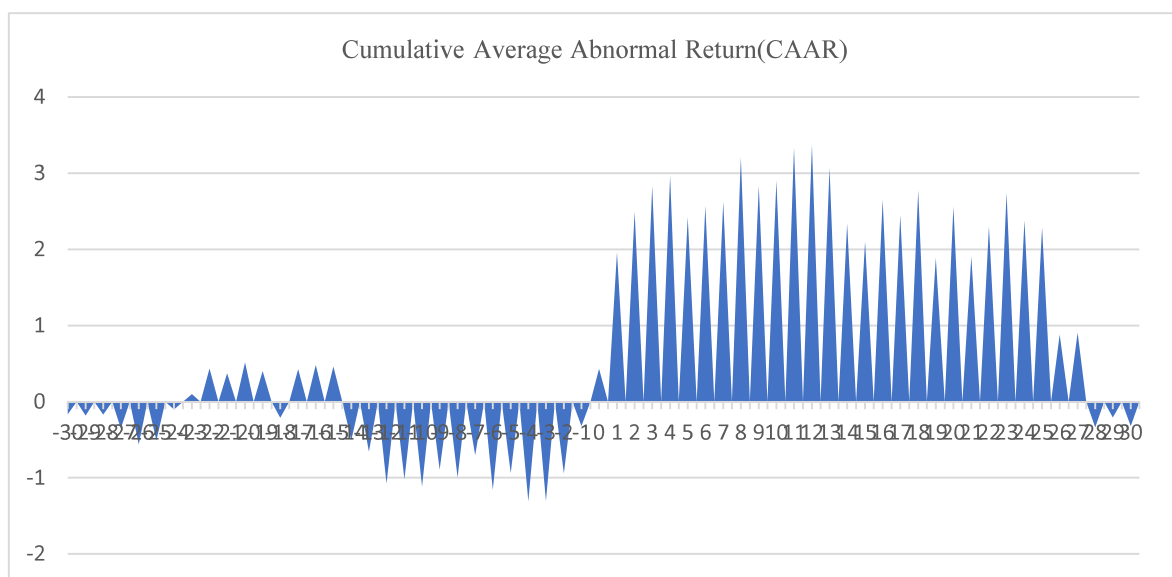
Day t	Average Abnormal Return	t-statistics	Level of significance	Null Hypothesis test status	Cumulative Average Abnormal Return (CAAR)
-4	-0.36809	-0.80479	0.435414	Accept Null Hypothesis H ₀₁	-1.30962
-3	0.005362	0.007471	0.994152	Accept Null Hypothesis H ₀₁	-1.30425
-2	0.361778	0.847778	0.411899	Accept Null Hypothesis H ₀₁	-0.94248
-1	0.622317	1.14669	0.272178	Accept Null Hypothesis H ₀₁	-0.32016
0	0.750844	2.162653	0.049792**	Reject Null Hypothesis H ₀₁	0.430686
1	1.532593	2.189697	0.047385**	Reject Null Hypothesis H ₀₁	1.963279
2	0.530139	1.101769	0.290543	Accept Null Hypothesis H ₀₁	2.493418
3	0.337118	0.616069	0.548485	Accept Null Hypothesis H ₀₁	2.830536
4	0.135489	0.511701	0.617441	Accept Null Hypothesis H ₀₁	2.966025
5	-0.54112	-1.36817	0.194443	Accept Null Hypothesis H ₀₁	2.4249
6	0.145246	0.363245	0.72226	Accept Null Hypothesis H ₀₁	2.570146
7	0.055394	0.108278	0.915429	Accept Null Hypothesis H ₀₁	2.62554
8	0.583354	1.422061	0.178556	Accept Null Hypothesis H ₀₁	3.208894
9	-0.3734	-1.0931	0.294191	Accept Null Hypothesis H ₀₁	2.835496
10	0.069507	0.22256	0.827336	Accept Null Hypothesis H ₀₁	2.905003
11	0.430778	1.067917	0.304988	Accept Null Hypothesis H ₀₁	3.335781
12	0.037565	0.08306	0.935069	Accept Null Hypothesis H ₀₁	3.373347
13	-0.30006	-1.20556	0.249474	Accept Null Hypothesis H ₀₁	3.073286
14	-0.73415	-1.78751	0.097177	Accept Null Hypothesis H ₀₁	2.339133
15	-0.23392	-0.43695	0.669321	Accept Null Hypothesis H ₀₁	2.10521
16	0.544041	1.473949	0.164295	Accept Null Hypothesis H ₀₁	2.649251
17	-0.20028	-0.31273	0.759443	Accept Null Hypothesis H ₀₁	2.448972
18	0.322801	1.186857	0.25652	Accept Null Hypothesis H ₀₁	2.771773
19	-0.88369	-1.76086	0.101751	Accept Null Hypothesis H ₀₁	1.88808
20	0.676592	2.115661	0.054247**	Reject Null Hypothesis H ₀₁	2.564672
21	-0.65967	-1.47921	0.162903	Accept Null Hypothesis H ₀₁	1.905003
22	0.396802	1.073622	0.302517	Accept Null Hypothesis H ₀₁	2.301805

				H ₀₁	
23	0.440835	0.43491	0.67076	Accept Null Hypothesis H ₀₁	2.74264
Day t	Average Abnormal Return	t-statistics	Level of significance	Null Hypothesis test status	Cumulative Average Abnormal Return (CAAR)
24	-0.36016	-0.73422	0.475851	Accept Null Hypothesis H ₀₁	2.382482
25	-0.09383	-0.19882	0.845482	Accept Null Hypothesis H ₀₁	2.28865
26	-1.4093	-1.03162	0.321062	Accept Null Hypothesis H ₀₁	0.879346
27	0.02835	0.090487	0.929279	Accept Null Hypothesis H ₀₁	0.907695
28	-1.24526	-2.58988	0.022432**	Reject Null Hypothesis H ₀₁	-0.33756
29	0.129431	0.262788	0.796833	Accept Null Hypothesis H ₀₁	-0.20813
30	-0.11364	0.43111	0.672222	Accept Null Hypothesis H ₀₁	-0.32177

Source: Data collected and compiled by the researchers

**Significant at 5% Level of significance.

Figure 1: Cumulative average abnormal return



Source: Data collected and chart prepared by the researchers

Table 3 depicts the average abnormal return before and after the acquisition period. The average abnormal return in the pre-period is -0.010671952 with an insignificant t value of -.169 and in the post-period is -0.025081883 with an insignificant t value of -.227. Null hypothesis in both periods are accepted, which indicates that there is no significant difference in the average abnormal returns before and after the acquisition period on the listed companies, which indicates that on average no such abnormality is viewed in all the days of the acquisition event.

Table 3: Average Abnormal Return before and after acquisition Period

Event	Average Abnormal Return	T- statistics	Significance level	Null Hypothesis test
Before the acquisition period	-0.010671952	-.169	.867	Accept null hypothesis H_{02}
After the acquisition period	-0.025081883	-.227	.822	Accept null hypothesis H_{02}

Source: Data collected and prepared by the researchers

Conclusions

In this paper, it has been observed that few abnormalities have been seen surrounding the acquisition date, Table 3 showed that there was a very minor movement in the average abnormal returns surrounding the event date. Abnormal returns have been increased just after the event date and cumulative average abnormal returns were showing negative values just before of the event day but after the event date, cumulative average abnormal returns were increasing up to t+4 days. It indicated that there was a short-term impact of acquisition on stock returns. It implies that share prices of stock showed a fluctuating trend when acquisition of shares of one company by another company took place. The findings of the study may provide an insight to present and potential investors in their short-term decision making.

Limitations of the Study

The main limitation of the study is that it has been conducted by taking a small sample of 14 companies from the BSE database (Indian stock market) for a particular calendar year, 2023 from 1st January up to 30th June. Secondly, stock return affected by so many factors but different factors were not taken into consideration in this study. In addition, it is very difficult to segregate the impact of acquisition on Stock return separately.

Scope for Further Research

In this study few companies' data were taken. Consideration of more companies over several years would be much more appealing and informative. Several uncontrollable factors were not considered over here. In future addition of more companies over a prolonged time period in different database or stock market like NSE would have been a great opportunity to view varied results.

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