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Effect Of Volatility And Liquidity On Acquiring Banks: Empirical Evidence From India

Debi Prasad Satapathy[1], *N. D. Prasad*[2]

[1,2]Assistant Professor, Centurion University of Technology and Management, Odisha

Email: [1]dsatapathy5@gmail.com

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ABSTRACT

The paper tries to explore is there any relationship between volatility and liquidity effects on the acquiring bank's performance of acquiring companies. The literature relating to the effect of volatility and liquidity effects is very few. This motivates me to explore whether there is any relationship between acquiring banks short term market performance with volatility and liquidity effects of acquiring banks. The objective of this study to find out the acquiring firm's volatility and liquidity effect on the Indian context. The paper tries to examine whether any effect in the post-merger performance of acquiring banks in terms of volatility and liquidity effect by using the F test and T-test. The study has taken the domestic merger of the Indian listed banks for the period from 2001-2012 to analyze the effect on volatility and liquidity effect in the Indian context. The results indicate there is no effect in volatility and liquidity in the Indian context for acquiring banks by comparing from pre-merger announcement to post announcement merger period..

1. Introduction

Volatility plays an important role in measuring the risk-return trade-off for the investor. Volatility due to merger announcement in banking sector carries effect in market return to the investors. Volatility may cause due to many factors. The merger and acquisition announcement affect the movement of share price and thus influence the returns to the shareholders as well. Analysis of the volatility due to the merger announcement in the banking industry is measured in terms of variation in the share price. Excess volatility in share price can shake the confidence of investors. Liquidity on the other hand may happen due to a sharp increase in trading volumes. The important questions arise does volatility and liquidity plays role in mergers and acquisitions announcement in Indian banking. The study will consider the effect of volatility and liquidity in the acquiring banks. The paper has calculated abnormal stock returns and compare the variability by using the F test from the pre-merger period to the post-merger period. The liquidity effect has been analyzed by comparing the trading volumes as a measure from pre-merger to a post-merger announcement by using a t-test. The paper focuses on 15 acquiring banks gone for merger during the period from 2001 to 2012. The abnormal return of the acquiring firm around the announcement period has been calculated by using event study methodology through the market-based model. The rest of the paper is organized as follows: section II review the related literature, Section III discuss the methodology and sample selection, and section IV presents the empirical results. Section V summarises and concludes.

2. Literature Review

M., Kumar, S., & Deisting, F (2013) has examined the impact of mergers announcement of 13 banks about stocks returns, volatility, and liquidity, and results reported that there is limited impact on volatility in the share price of banks and no significant impact on the liquidity of the bidder’s bank. Lipson, M. L., & Mortal, S, (2007) describes that liquidity risk as well as acquiring firm characteristics affect the mergers and acquisitions deals. Officer,(2007) also describes that liquidity is an important factor for pricing and success of mergers and acquisitions. Nielsson, U, (2009) stock liquidity does not seem to be an important factor for small and medium-sized firms. Singh, A., & Sharma, A. K, (2016) has examined the macroeconomic factor and bank's specific characteristics on liquidity effects. Bank size has been found to negatively affect the liquidity of the firms.

3. Research Objective and Hypotheses of the study

The objective of this paper analyzes the volatility and liquidity effects of acquiring companies in the Indian banking sector. The paper has the following issues:

1. To analyze the effect of mergers and acquisitions announcement on volatility in acquiring company in the Indian banking sector
2. To examine the effect of mergers announcement on the liquidity of acquiring banks.

Hypotheses of the Study

1. H_1= M&A announcement does not lead to significant volatility in acquiring banks
2. H_2= M&A announcement does not lead to significant liquidity to the acquiring banks

Data and Methodology of the study

The sample for this study is collected from CMIE Prowess Database. The sample consists of the announcements of mergers and acquisitions by banking companies listed on the Bombay stock exchange. The study period covers mergers and acquisitions during the period from 2001-2012. The sample consists of domestic mergers of the Indian banking sector only. The final sample consists of 15 banking companies. For this study, the stock exchange announcement of the merger has been taken as the event date (Day zero).To conduct an event study daily adjusted closing price of data all banking firms and Bombay stock exchange index data has been collected from prowess database. The daily stock returns have been calculated as follows:

$$R_{i,t=}\frac{P_{i.t}}{P_{i,t-1}}-1$$

The data of daily closing price and trading volumes of sample companies are taken for the event window. For trading volumes, the number of shares traded has been taken into consideration. To examine the stock returns event study methodology used, for volatility F-test has been used by calculating the standard deviation of daily returns of sample companies for the event window, evaluating the change in trading volumes use of t-test, equal variances have been used. The total period analysis in respect of acquirer company divided into two-measure periods that is estimation window and event window. The event window has been taken from -20 to the date of announcement to 20 Days. The α (alpha) & ß (beta) have been computed by regressing the market returns during the estimation window of 120 days before (t-20) days. The share price data and market index data has been used (BSE Sensex). The cumulative average abnormal returns of the merger announcement window are estimated for the acquirer company by summation of average abnormal returns in the respective window. The market model was estimated by using (OLS) ordinary least square regression.

4. Empirical Results

***Table 1**: Acquirers (N=15)*

Window period	**CAAR**	**t-test timeseries**	**p-value**	**t-test cross-sectional**	**p-value**	**patell z**	**p-value**
[−10,0]	-0.002	-0.094	0.925	-0.052	0.959	-0.600	0.548
[−20,0]	0.016	0.579	0.563	0.532	0.595	0.540	0.590
[0]	0.004	0.711	0.477	0.496	0.620	0.340	0.734
[0,10]	-0.010	-0.505	0.614	-0.477	0.633	-0.005	0.996
[-10,10]	-0.016	-0.588	0.556	-0.380	0.704	-0.513	0.608
[-20,20]	0.033	0.853	0.394	0.682	0.495	1.641	0.101

Table 1 report cumulative abnormal return to the sample acquiring companies in the different window period. The acquiring companies have found to be positive and insignificant abnormal returns in the pre-event announcement period. The returns to the acquiring banks were found to be positive and insignificant in the event date announcement. The acquiring bank seems to be generated a negative abnormal return in the post-announcement period.

***Table 2:** Volatility of sample Acquiring Banks*

Name of the Company	**ð (Pre-Volatility)**	**ð (Post - Volatility)**	**F-Value**	**P Value**	
Andhra Bank	0.0307	0.0265	1.3488	0.5206	
Bank of Baroda	0.0340	0.0097	12.309	0.0000	*
Bank of India	0.0092	0.0138	0.4430	0.0839	
Corporation Bank	0.0438	0.0238	3.4015	0.0053	*
Federal Bank Ltd.	0.0225	0.0216	1.0855	0.8599	
H D F C Bank Ltd.	0.0055	0.0073	0.5592	0.2143	
I C I C I Bank Ltd.	0.0290	0.0197	2.1827	0.0972	
I D B I Bank Ltd.	0.0336	0.0305	1.2159	0.6743	
Indian Bank	0.0206	0.0193	1.1341	0.7867	
Indian Overseas Bank	0.0250	0.0243	1.0602	0.9000	
Indusind Bank Ltd.	0.0125	0.0311	0.1609	0.0002	*
Oriental Bank Of Commerce	0.0262	0.0197	1.7798	0.218	
Punjab National Bank	0.0109	0.0296	0.1357	0.0001	*
State Bank of India	0.0326	0.0167	3.8101	0.0054	*
Vijaya Bank	0.0604	0.0479	1.5883	0.3218	

***** *Statistical significance at 0.05 level*

Table 2 reports the volatility effect of acquiring banks out of fifteen banks four banks to report the increase of standard deviation from pre-merger period to post-merger period, hence no much influence in volatility due to mergers announcement, however, there is significant results in terms of volatility for four banks.

Table 3. *Liquidity of Acquiring Banks*

Name of the Company	**Pre Liquidity**	**Post Liquidity**	**Change volumes**	**t-Statistics**	**P-Value**
Andhra Bank	-0.0080	0.1049	-0.1129	-0.5914	0.5578
Bank of Baroda	-0.0923	-0.1058	0.0135	0.0461	0.4817
Bank of India	0.0113	-0.0080	0.0193	0.1066	0.9157
Corporation Bank	-0.0093	0.0883	-0.0976	-0.3310	0.7425
Federal Bank Ltd.	0.0105	-0.0190	0.0295	0.1227	0.9030
H D F C Bank Ltd.	-0.0152	-0.0370	0.0218	0.1214	0.9040
I C I C I Bank Ltd.	0.0031	-0.0274	0.0305	0.1171	0.9074
I D B I Bank Ltd.	-0.0073	-0.0808	0.0735	0.3729	0.7113
Indian Bank	-0.0549	-0.0308	-0.0241	-0.0835	0.9339
Indian Overseas Bank	0.0218	0.0415	-0.0197	-0.0779	0.9383
Indusind Bank Ltd.	-0.0197	0.0180	-0.0378	-0.1468	0.8840
Oriental Bank Commerce	-0.0378	-0.1225	0.0847	0.4972	0.6219
Punjab National Bank	0.0890	0.1740	-0.0850	-0.3595	0.7212
State Bank of India	0.0465	-0.0366	0.0831	0.6041	0.5494
Vijaya Bank	-0.0819	0.1200	-0.2019	-0.9101	0.3685

**Statistical significance at 0.05 level*

Table 3 explains the liquidity effect of acquiring banks from the pre-merger period to the post-merger period. most of the acquiring banks report the negative value indicating that liquidity has been decreased from pre-merger to post-merger period, however, in some acquiring banks there is an increase of liquidity but found to be statistically insignificant in terms of liquidity of post-merger period.

5. Conclusion

The paper analyses the performance of Indian banking acquiring companies in the short run period in terms of return, volatility, and liquidity of acquiring banks. The sample consists of 15 banking companies gone for merger and acquisitions during the period from 2001 to 2012. The result indicates a negative return in the post-announcement period. volatility has been decreased in most cases and liquidity has been statistically insignificant in the overall sample of acquiring banks. The sample consists only of banking company however the study could be made for larger samples as well as other sectors' effect on volatility and liquidity of acquiring companies.

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