ANALYSIS OF VOLATILITY OF CROSS BORDER MERGER COMPANIES LISTED IN NSE

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ABSTRACT

In globalization period, Cross-border mergers and acquisitions have increased radically over the last two decades. Cross-border Merger and acquisition activity in India is booming. In particular, the percentage of cross-border transactions has risen significantly. Cross border Mergers and acquisitions are necessary for the survival of the Indian industry if they wish to become global players and have a worldwide presence. The main forces of change in the Cross-border mergers and acquisitions is global competitive environment, technological change, regulatory change, and capital market change and create new business opportunities for MNEs, which they pursue aggressively. This paper provides with an overview of annualized stock price volatility of NSE companies after the cross border post merger acquisition.

Keywords: Merger, Acquisition, Volatility, NSE

INTRODUCTION

Cross-border mergers and acquisitions sharply increased over the last two decades. The rise of globalization has exponentially increased the market for cross border M&A. Cross-border mergers and acquisitions are in increment trend in contemporary business environment. It is often specified that cross-border capital reallocation is partly the result of financial liberalization policies, government policies and regional agreements. The trend of increasing cross border M&A has become faster with the globalization of the world economy. Definitely, the 1990s were important period for cross border M&A with a nearly 200 percent jump in the volume of such deals in the Asia Pacific region. This region was favored for cross border M&A as most nations in this region were opening up their economies and liberalizing their policies. Some of the other motivating factors behind mergers and acquisitions are the desire to acquire a competency or capability, to enter into new markets or product segments, to enter into the Indian market generally, to gain access to funding resources, and to obtain tax benefits. This study is mainly concentrated on analyzing the impact of cross border post merger acquisition on the performance share price volatility of NSE Companies after the acquisition of Foreign Companies. This study covers the share price reaction of acquirer companies after the cross border post merger acquisition in National Stock Exchange (NSE).

CROSS-BORDER MERGER AND ACQUISITIONS

A company in one country can be acquired by an entity (another company) from other countries. The local company can be private, public, or state-owned company. In the event of the merger or acquisition by foreign investors referred to as cross-border merger and acquisitions will result in the transfer of control and authority in operating the merged or acquired company. Assets and liabilities of the two companies from two different countries are combined into a new legal entity in terms of the merger, while in terms of acquisition, there is a transformation process of assets and liabilities of local company to foreign company (foreign investor), and automatically, the local company will be affiliated.

VOLATILITY

In finance, volatility is a measure for variation of price of a financial instrument over time. Historic volatility is derived from time series of past market prices. An implied volatility is derived from the market price of a market traded derivative (in particular an option).

STOCK PRICE FLUCTUATIONS

The price of a stock fluctuates fundamentally due to the theory of supply and demand. Like all commodities in the market, the price of a stock is sensitive to demand. However, there are many factors that influence the demand for a particular stock. The fields of fundamental analysis and technical analysis attempt to understand market conditions that lead to price changes, or even predict future price levels.

REVIEW OF LITERATURE

Yiling Zhang, 2015 in their article entitled 'Merger Means of Payment and Analysts' Bias between Merger Announcement Date and Merger Effective (Withdrawn) Date' estimates in a time window between merger announcement date and merger effective date or between merger announcement date and merger withdrawn date. We also find that the increase of valuation ratios of target firms, such as initial target price ratio and market to book ratio, will lead to a decrease of realized forecast error in a time frame stated above. In particular, the impact of initial target price ratio on realized forecast errors is only observable within the first two trade months after merger announcement date.

Eric Ohrn, Nathan Seegert, 2015, The Impact of Shareholder Taxation on Mergers and Acquisitions, examined the impact of share holder taxation on merger and acquisition through efficient reallocate capital, capture positive synergies. However, inefficient mergers dampen innovation and decrease efficiency. We demonstrate, within a neoclassical model, that inefficient acquisitions can become value-maximizing to shareholders when dividend tax rates are higher than capital gains tax rates. This tax wedge

allows shareholders to free "trapped" equity, providing a tax discount to acquisitions. We test this mechanism using variation in the dividend tax rate before and after 2003. The results suggested that acquiring firms performed 14 percent better after the dividend tax rate was reduced in 2003. These results are especially stark given the sheer magnitude of merger and acquisition activity in the US economy, which in 2014 reached $1.6 trillion.

Paul. M.Healy, Krishna.G.Palepu and Richard. S.Rubak (1990) in their working paper entitled, "Does Corporate Performance Improve After Merger?" examined the post-acquisition operating performance of merged firms by using a sample of the 50 largest mergers between U.S Public industrial firms during the period from 1979 to 1983. The results indicated that merged firms recorded significant improvement in asset productivity relative to their industries after the merger, leading to higher post-merger operating cash flow returns. Further, the study found that there is a strong positive relation between post-merger increases in operating cash flows and abnormal stock returns at merger announcements, indicating that expectations of economic improvements underline the equity revaluations of the merging firms.

The working paper entitled, "The Effect of Mergers on Corporate Performance and Stock Prices", by Keisho Komoto (1999) analyzed the factors which facilitated for increase in mergers and the merger's effect on business performance. It is found that merger announcements produced no significant effects on business performance. They could affect stock prices in either positive or negative ways depending on the industry. The study suggested that the efficient market and perfect information, the effects of mergers on business results were inconsistent with their effects on stock prices.

NEED FOR THE STUDY

This study aims to analyze the volatility in share prices of NSE Companies during the post merger period. The results of the study will be useful for the NSE Index fund managers to know the changes in the share price after cross border merger. Hence an attempt has been made to study the share price reaction to the stock of acquirer companies listed in Indian stock exchange (NSE) during post merger.

OBJECTIVES OF THE STUDY

The present study is carried out with the following objectives.

➢ To understand the concepts of cross border merger and stock price reaction after cross border merger.
➢ To evaluate the inter day volatility of companies based on open to open share price.
➢ To evaluate the inter day volatility of two companies based on close to close share price.
➢ To summarize the findings and suggestions of the study.

SAMPLE SELECTION

The sample companies have been taken from the India's most active stock exchange namely NSE. In this study the indicator of the stock exchange is taken for analyzing the data. There are six companies in the NSE which underwent the cross border merger has taken as samples for this study.

LIST OF SAMPLE COMPANIES

Cross Border Merger made by NSE Companies

Acquirer	Target company	Year	Deal Value ($ in Billion)	Country
Bharati Airtel	Zain Africa	2010	10.7	Kenya
Adani Enterprises	Port Terminals	2011	1.97	Australia
Reliance Industries	Oil & Gas Assets	2007	1.7	United States
Tata Motors	Jaguar Cars Land Rover	2008	2.3	United Kingdom
ONGC	Imperial Energy	2008	2.62	United Kingdom
Hindalco Industries Ltd	Novelis	2007	5.73	Canada

Sources of Data

The present study mainly depends on the secondary data. For evaluating the volatility of NSE Nifty daily share prices were used. The required data were collected from the website like www.nseindia.com.

Period of the Study

The period of this study considers from the date of cross border post merger till the date of 31st March 2016 for selecting the sample as well as for analysis.

TOOLS USED FOR ANALYSIS:

Inter–day Volatility

The variation in share price return between the two trading days is called inter–day volatility. Inter–day volatility is computed by close to close and open to open value of any index level on a daily basis. Standard deviation is used to calculate inter–day volatility. The inter–day volatility is calculated by close to close and open to open volatility method.

Close to close volatility

For computing close to close volatility, the closing values of the Sensex is taken. Close to close volatility (standard estimation volatility) is measured with the following formula.

$$\sigma = \sqrt{(\frac{1}{n-1}) \sum (r_t - \bar{r})^2}$$

Where,

n = The number of trading days

r_t = Close to close return (in natural log)

$\bar{r}$ = Average of the close to close return.

Open to open volatility

Open to open volatility is considered necessary for many market participants because opening prices of shares and the index value reflect any positive or negative information that arrives after the close of the market and before the start of the next day's trading .The following formula is used to calculate open-to-open volatility:

$$\sigma = \sqrt{\left(\frac{1}{n-1}\right)\sum(r_t - \bar{r})^2}$$

Where,

n = The number of trading days

r_t = Open to open return (in natural log)

$\bar{r}$ = Average of the open to open return

ANALYSIS OF INTER - DAY SHARE PRICES VOLATILITY:

Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. Commonly, the higher the volatility is the riskier the security. Volatility is expressed as a percentage coefficient within option-pricing formulas, arises from daily trading activities. The variation in share price return between the two trading days is called inter–day volatility. Inter–day volatility is computed by close to close and open to open value of any index level on a daily basis. The present study is examined the volatility of NSE companies after the cross border post acquisition to till 31st March 2016.

Table 1 – Annualized Inter-Day Volatility for Open to Open Price

Company	Year								
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bharati Airtel	—	—	—	0.118	0.104	0.101	0.136	0.081	0.078
Adani Enterprises	—	—	—	—	—	0.218	0.265	0.199	0.922
Reliance Industries	1.475	0.504	0.460	0.072	0.119	0.050	0.071	0.058	0.070
Tata Motors	—	0.488	0.555	0.144	0.846	0.139	0.120	0.099	0.178
ONGC	—	—	0.192	0.334	0.107	0.072	0.128	0.133	0.113
Hindalco Industries Ltd	0.652	0.580	0.367	0.166	0.216	0.122	0.178	0.198	0.174

The above table shows that the Annualized inter day volatility (Open to Open) values of NSE companies from the year of cross border acquisition (2008) to 31st March 2016. It is clearly shown in the table that in the year of 2008, the volatility of Reliance industries Ltd value is higher 1.475018 than other Companies, It indicates that the fluctuation of share price of Reliance industries Ltd was high. However the company Reliance industries Ltd indicates that the volatility value is very low 0.04981 when compare to other companies. It is observed from the table that, the volatility in share prices of Reliance Industries Ltd is high (2008) and low at the end of the period (2013) after post merger acquisition.

Table 2 – Annualized Inter-Day Volatility for Close to Close Price

Company	Year								
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bharati Airtel	—	—	—	1.070	0.283	1.481	1.204	1.341	0.072
Adani Enterprises	—	—	—	—	—	0.202	0.256	0.208	0.976
Reliance Industries	1.402	0.359	0.438	0.064	0.115	0.044	0.075	0.058	0.079
Tata Motors	—	0.458	0.556	0.149	0.950	0.134	0.121	0.090	0.160
ONGC	—		0.152	0.345	0.079	0.064	0.116	0.115	0.119
Hindalco Industries Ltd	0.290	0.432	0.330	0.152	0.203	0.104	0.174	0.169	0.192

Table 2 explains that the Annualized inter day volatility (Close to Close) values of NSE companies from the year of cross border acquisition (2008) to 31st March, 2016. It is clearly shown in the table that in the year of 2013 the volatility of Bharti Airtel Ltd value is higher 1.481269 than other Companies. It indicates that the fluctuation of share price of Bharti Airtel Ltd was high. However the company Reliance industries Ltd indicates that the volatility value is very low 0.044005 when compare to other companies. It is observed from the table that, the volatility in share prices of Bharti Airtel Ltd is high (2013) and volatility in share prices of Reliance Industries Ltd is high low at the end of the period(2013) after post merger acquisition.

FINDINGS OF THE STUDY:

- It is found from the study that the volatility in share price (Open to Open) is high in the year 2008 for the company Reliance Industries Ltd after the cross border post merger acquisition.
- The analysis of this study shows that the volatility in share price (Open to Open) is low in the year 2013 for the company Reliance Industries Ltd after the cross border post merger acquisition.
- From the analysis of this study, it is found that the volatility in share price (Close to Close) is high in the year 2013 for the company Bharti Airtel Ltd after the cross border post merger acquisition.

- The study found that the volatility in share price (Close to Close) is low in the year 2013 for the company Reliance Industries Ltd after the cross border post merger acquisition.

SUGGESTIONS OF THE STUDY:

The following measures are suggested based on the findings of the study.

- The investor must make an investment in the right time and analyze the market situation because the market gives unlimited profit and unlimited loss.

- The investor is advised to make investment when the company having less volatility in its share prices. Thus the investor can take investment decision according to the performance of companies after the analysis of post merger acquisition.

- The SEBI has carefully monitor and control by strengthening its pro-active and reactive measures for the control of stock price volatility after the cross border post merger Acquisition.

- The investors are suggested to invest in less volatile companies to avoid huge losses by investing in high volatile companies by expecting more return.

CONCLUSION:

The present study has analyzed the volatility of companies listed in National Stock exchange (NSE) after post merger. From the above findings, it is clearly understood that the volatility in share prices of sample companies would reflects the customers or shareholders or traders' psychology. The present study presented empirical results pertaining to share price volatility of companies listed in NSE after the cross border post Merger Acquisition. The study concluded that the value of volatility of company wise analysis is generally high in the company of **Bharati Airtel** in close to close in the year 2013 and the value of volatility of share price is **low** in the company of **Reliance industries Ltd** in close to close in the year 2013 after the cross border post merger acquisition. Finally the study concludes that the value of volatility was high in the year 2013 for the company Bharati Airtel after the cross border post merger acquisition (including open to open and close to close). So the investors have to wait for sometimes and watch the market and share prices before investing the money that would helps to protect the investments.

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