

**Do Mergers and Acquisition Create Shareholders Wealth in India? Event study**

**Methodology on Banking and Manufacturing Sectors.**

Student Name: Niraj Lalan

Student Number: 10505689

Dissertation submitted in partial fulfillment of the requirements for the degree of

M.Sc. in International Accounting & Finance

at Dublin Business School

Supervisor Name: Elliott Jordan-Doak

August 2019

## Declaration

I declare that this dissertation that I have submitted to Dublin Business School for the award of M.Sc. in International Accounting & Finance is the result of my investigations, except where otherwise stated, where it is acknowledged by references. Furthermore, this work has not been submitted for any other degree.

Signed: Niraj Lalan

Student Number: 10505689

Date: 26<sup>th</sup> August 2019.

## Acknowledgments

This dissertation results from the hard work and support that has been accorded to me by several people whom I sincerely obliged. To complete this study, it took the grace of God to undertake and complete this work. My supervisor Mr. Elliott Jordan-Doak has been so supportive, and I wish to express my sincere appreciation. This dissertation was a worthwhile undertaking since he shared his expertise and guidance, which added valuable enrichment for this study. He was very patient and consultative throughout the process.

I would like to express my appreciation to the administration of the Bombay Stock Exchange (BSE) data center and the CIME database, which provided the valuable historical time series data needed for the research. To all others who contributed to this study, I say THANK YOU and may God bless you all abundantly.

## Table of Contents

Declaration.....	2
Acknowledgments.....	3
Abstract.....	6
CHAPTER ONE.....	7
INTRODUCTION.....	7
1.1 Background of the study.....	7
1.1.1 The trends in M&A in Indian.....	9
1.1.2 Mergers in the Banking Industry.....	10
1.1.3 M&A in the Indian Manufacturing industry.....	11
1.2 Problem statement.....	12
1.3 Research Question.....	14
1.4 The objective of the study.....	14
1.5 Significance of the study.....	14
1.5.1 Business world.....	14
1.5.2 Investors.....	15
1.5.3 Academicians and financial advisors.....	16
CHAPTER TWO.....	17
LITERATURE REVIEW.....	17
2.1 Introduction.....	17
2.2 Theoretical Review of M&A.....	18
2.2.1 Wealth increasing theories.....	18
2.2.2 The Value-Destroying Theories.....	20
2.2.3 The Value-Neutral Theories.....	23
2.3 Empirical Studies on M&A.....	23
2.3.1 Mergers and Acquisition trends India in the banking and manufacturing sectors..	24
2.3.2 Event Study Methodology studies.....	24
2.4 Chapter Summary.....	27
CHAPTER THREE.....	29
RESEARCH METHODOLOGY.....	29
3.1 Introduction.....	29
3.2 Participants.....	29
3.3 Sample Size.....	30

3.3.1 Data Collection .....	31
3.3.2 Secondary collection of data.....	31
3.4 Design .....	32
3.5 Event Study Methodology .....	33
3.6 Procedure .....	35
3.6.1 Statistical tests.....	39
3.7 Ethics.....	39
3.8 Data Analysis .....	40
CHAPTER FOUR.....	41
DATA ANALYSIS, RESULTS AND DISCUSSION .....	41
4.1 Introduction.....	41
4.2 Sampled Characteristics.....	41
4.3 Market Reactions around the Select Event Dates .....	41
4.4 Mergers and Acquisitions effects on shareholders Wealth.....	43
4.5 Effects on the Shareholders Returns .....	45
4.6 Data Presentation .....	46
4.7 Discussion of Research Findings .....	48
CHAPTER FIVE .....	52
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	52
5.1 Introduction.....	52
5.2 Conclusions.....	52
5.3 Recommendations.....	54
5.4 Limitations of the Study.....	55
5.5 Suggestions for Further Research .....	56
References.....	57
Appendix I .....	63

## Abstract

The main aim of this research is to find out how M&A create shareholders wealth in Indian banking and manufacturing sectors. The sample comprised of ten companies listed on BSE at the time of announcement (or approval) from both the banking and manufacturing sectors. They included Bank of Baroda, State Bank of India, Kotak Mahindra Bank, ICICI Bank, State Bank of India, Motherson Sumi Systems, Reliance Industries, United Breweries, Tata Steel Ltd. and TVS Srichakra.

The event window that was chosen for the observation was 11 day when the M&A approval was made. The data for each company was collected using a data observation sheet. Name of the bank; event dates surrounding the approval, approval date (event date), share price index, and average share price. An event study methodology was used to determine the effects of M&A on shareholders wealth (Brown and Warner, 1985). The model of the market was used to determine whether or not M&A have a significant effect on the participants. From this, the research could be able to determine whether the shareholders' wealth is enhanced by the mergers.

The study produced the two main findings: First, the past Indian M&A were not creating wealth to the shareholders. Secondly, there were no significant changes in the share prices for the 11-day event window. Key findings of the study were two-fold. First, the study established that the share prices of the six sampled firms did not exhibit significant changes within an 11-day event window. The recent studies seem to concur with the findings. The conclusion drawn from the study is that the shareholders' bidder companies do not gain in terms of wealth in the short run while the target gains wealth. The study recommends that management should be careful when investing in M&A.

**Keywords:** Event study, Mergers, Acquisitions, Abnormal Returns

# CHAPTER ONE

## INTRODUCTION

### **1.1 Background of the Study**

The general term that is used to refer to the consolidated companies is Mergers and acquisitions (M&A). Cartwright and Schoenberg (2006, p. 2) defined a merger as an amalgamation of two or more firms to form a large conglomerate firm while an acquisition is the buying of one company by another with no new company being formed. When one company takes all the assets and liabilities of another company, a merger is said to have occurred. A merger happens when one firm takes over all the assets and all the debts of another (Cartwright and Schoenberg, 2006, p. 3). The identity of the joint company is retained while that of an acquired company lapse. Ordinarily, the majority of the shareholders in a company must approve through a voting process for any merger to happen. A company can be acquired in several ways, one being buying the outstanding shares of stock or purchasing all the assets of the company (Gregoriou and Depamphilis, 2012).

Globally, there are several M&A that are taking place annually. The massive recollection of resources both within and across manufacturing and banking sectors of the Indian economy is represented by M&A which have drawn the interest of many empirical studies. Mergers and acquisition have undergone extensive research to find out whether they are wealth-creating or reducing events shareholders involved. According to empirical studies, mergers seem to provide at best a varied performance to different participants involved (King, Slotegraaf and Kesner, 2008, p. 328). The positive short-term returns are enjoyed by the target-firms' shareholders. However, the acquiring firms' investors usually experience a share price reduction in the month following the announcement of a merger (King, Slotegraaf and Kesner, 2008, p. 327).

The companies engage in M&A for various reasons. The M&A is justified by the underlying principle that most companies in both manufacturing and banking sector are after performance improvement (Joshi, 2011, p. 159). The financial growth may be attained through economies of scale whereby the cost of doing business is lowered for combined firms. There are many and varied reasons why banks and manufacturing industries engage in M&A. The main underlying principle used to justify M&A activity is that combined firms pursue to improve financial performance and to create better terms for its shareholders.

Several companies in both manufacturing and banking sectors in India are performing M&A with the intentions of attaining economic gains which are anticipated to flow to the shareholders in an efficient market (Joshi, 2011, p.160). For any merger or acquisition to take place, the value of the combined firms must be worth more than when the firms exist as single have several potential advantages such as attaining the economies of scale, taxation advantages, increased resources, and efficiency. The M&A also have the potential to increase market power by the purchasing competitors.

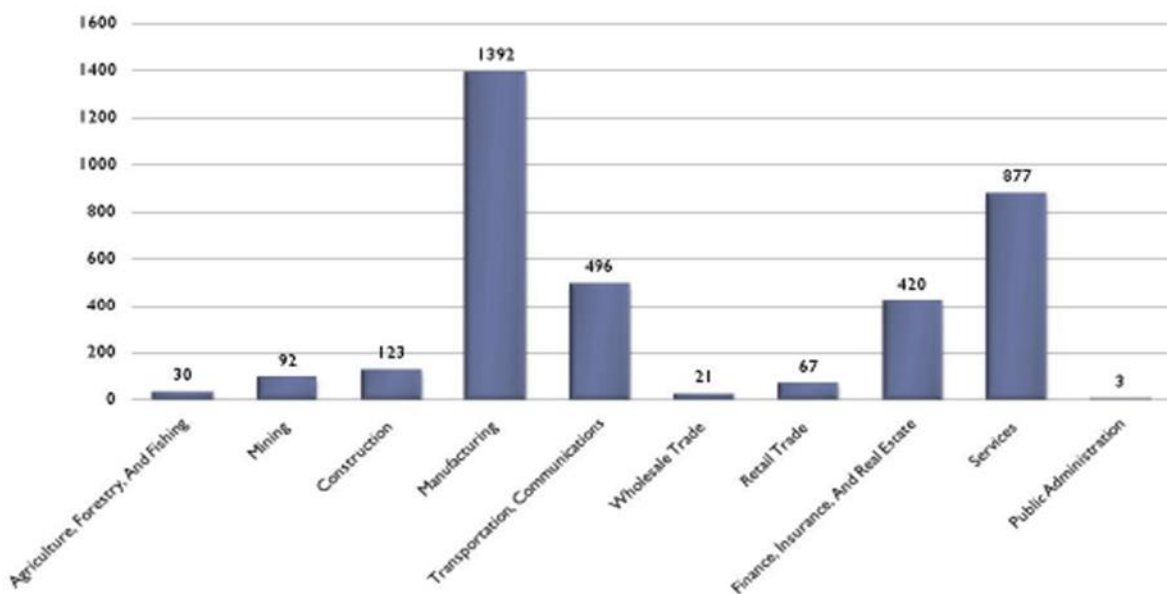
Joshi (2011, p. 159) states that the acquisitions of the companies in both banking and manufacturing sectors are fueled by mostly the continuous desire to spur growth for the products and services, increasing the market power by purchasing the proprietary rights, rectifying the weaknesses in the business areas, discovering the new geographical locations for the business. M&A are considered as the very complicated business transactions as a result of the tax and legal issues that are involved in a merger transaction. Therefore, it may become difficult to define a transaction, perform the cost-benefit analysis before making a decision on mergers or acquisition transactions. This dissertation is aimed at establishing how M&A create shareholders wealth in short run using the event study methodology.



### 1.1.1 The trends in M&A in Indian

There have been significant changes in the trends of M&A in India over the last decade. The M&A have increasingly become international activities in India for the previous years. This is due to the increased competition around the world, among other factors. The prevalence of M&A is high in all the industries in India. However, the manufacturing sector accounts for a large percentage of M&A, with 40% of the total (Pandya, 2017, p.7).

**Figure 1.1: Sector Wise Volume of the deals**



The Indian corporate has experienced substantial growth as a result of the M&A. Merger and acquisition in India are categorized in four categories according to the Forbes magazine namely: the decline of the costs of debts, liquidity abundance, technology and energy, and political factors. This trend is mainly driven by the government willingness to support the growth of the business, motivation to reduce the supply chain dependence uncertainties, taxation, and horizontal integration causing the distressing sales and marketing (Pandya, 2017, p.8).

Capital market and government policy stability in the year 2018 were very encouraging, and as a result, the volume record deal of USD 76.2 billion was recorded, the highest since

2010. Western Europe and the United States experienced political instability and therefore a considerable setback for the industries those economic zones (Dickerson, Gibson and Tsakalotos, 1997). The performance of the Indian industries is highly dependent on the stability of government policy. The Indian M&A sector are dominated by domestic activity. The sector recorded 505 deals that are worth a total of USD 25.1 billion. This was a 5% growth when compared to 2015. The two sectors that contribute significantly to the activity in India, followed by transport and real estate. All these M&A were driven by different reasons, such as an advantage in taxation, debt reduction, and market share growth. M&A sectors in India in recent days has been growing against all the setbacks in the global market.

The strength of the Indian domestic economy has been the main driving force excellent performance that is witnessed by the corporates desire to grow at the international level. The United States has been offering support for the cross-border M&A. The analysis was further divided into manufacturing and banking sectors since they account for a large percentage of merge and acquisitions. The trend analysis is primarily split into a sector-wise analysis of M&A trends. The trend analysis is overall presented in the figure above (Pandya, 2017, p.8).

### **1.1.2 Mergers in the Banking Industry**

As a result of the economic reforms, the industries in Indian have started restructuring along with all the business activities by concentrating on the core activities by through M&A since the competition is ever-growing both domestically and globally. The Institute of Chartered Accountants of India issued accounting standard 14, which deals with Accounting for amalgamations (Shakya, 2014). This standard recognizes the two categories of amalgamations where not only all the assets and liabilities are pooled together but also the interest of the shareholders. The second form of M&A are the ones in which one company is acquired by another, and as a result of the shareholders of the acquired company still, continue

to have an interest in terms of shares in the combined entity. Such mergers are purchased in nature (Joshi, 2011, p.158).

In developing economy such as India, the banking sector is one of the rapidly growing areas. M&A are one the most vital growth tool which has been quite intriguing for scholars and researchers. Banking is one of the fastest-growing industries in the post-liberalization era (Joshi, 2011, p.158). The weak banks which find it hard to survive in the economy due to stiff competition find M&A as a very useful tool. One of the reasons for M&A, as evidenced by the various study is that the local and small banks find it difficult to bear the impact of the global economy.

Some private banks in India used mergers as a strategic tool for expanding their horizons. The rural markets of India have a huge potential since the major banking institutions in India have not yet explored the opportunity. Therefore, mergers are used by ICICI Bank Ltd. as a strategy for expansion in the rural market. Rural India is making the banks to be successful. Joshi (2011, p.163) claims that through mergers, these banks networks are strengthened, enhance the customer base, expand market share, and geographical boundary. Any action of the object results in the reactions on the other hand, and that is what was witnessed in the merger of the ICICI Bank Ltd. and Bank of the Rajasthan when workers of BOR got disconcerted when they heard about the news of the merger (Joshi, 2011, p.163).

### **1.1.3 M&A in the Indian Manufacturing Industry**

The Indian manufacturing sector is vast, and since the 1990s, the market share of the manufacturing industry has for a long time stagnated. Other comparable industries have substantial manufacturing value added (MVA) in the Gross domestic product (GDP). The manufacturing sector size is relatively assessed by looking at the India MVA. The management of the manufacturing company has to make informed decisions on whether to engage in a

merger or an acquisition in relation to the creation of wealth for the shareholders. The ability of a merger to create wealth for the shareholders is influenced by various factors. From the review of various literature, there is a vast number of studies on other developed countries manufacturing firms that have tried to wealth creation ability of the M&A. From the various literature, it is observed that the AR on the stock are used to examine the effect of M&A on shareholders wealth.

From the literature, it is observed that event study methodology is used to examine the impact of M&A on shareholders wealth. These studies basically the impact of M&A by comparing the increase or decrease of the abnormal return on pre and post-M&A in manufacturing. However, it is possible to get mixed results as a result of different factors influencing the M&A in manufacturing industries. The study chose the intended parameters in order to over this challenge. The main objective of the study will be to find out how M&A creates shareholders wealth in the manufacturing sector using listed manufacturing companies so as to provide stable results. In this study, the share index will be used to determine the AR on pre and post M&A.

## **1.2 Problem statement**

Globally, there have been several studies that have been conducted to determine the effects of M&A on shareholders wealth. The studies have mainly focused on the developed markets globally such as USA, Europe, and Asia (Froese, 2013). When the post acquisitions performance of some companies was examined, the conclusion that was drawn from the research shows that only the operating performance of the firms improved significantly after merging the companies. The fundamental question in this study is whether mergers and acquisition create shareholders wealth in both the banking and manufacturing sectors of the Indian economy?

The results of various studies were reviewed which investigated either indirectly or directly into the critical question, "Do mergers and acquisition creates shareholders wealth?" the suggestions that were provided by the review include that of the instance where the firms shareholder wealth may gain from a merger or an acquisition because of the technical, diversionary and pecuniary synergies together with a clear vision (Mourdoukoutas, 2011). According to most studies, there is no evidence that seems to indicate that shareholders wealth increases as a result of the merger and acquisition. However, the merged or acquired firms show different outcomes in terms of performance in a post-merger or acquisition. The banking and manufacturing industry are both affected by various macro-economic factors, and therefore, the study seeks to find out the impact that mergers or acquisition would have on both banking and manufacturing sectors of the economy.

Despite several studies that have been conducted in regard to M&A in India, none has really highlighted what happens to the bank and manufacturing sectors of the economy during the post-merger or acquisitions, whether there is a significant difference in post-merger on both the banking and manufacturing sectors of the Indian economy is the question that this study seeks to find out. As a result of these research gaps from the past studies, the dissertation intends to shed more light on what happens in both banking and manufacturing during post-merger or acquisition in terms of wealth creation from each of the sectors of the economy.

When the firms combine, they should exhibit increased wealth for shareholders as hypothesized by the study. The wealth creation determinants for both sectors include improved stock performance in post announcement. The hypothesis is based on the synergy that results from the newly formed entity is highly capitalized, expanded infrastructure, better-equipped workforce, larger market share, and an expanded pool of customers. The dissertation seeks to untangle the above question by measuring the performance of the shares in the stock market

prior and post M&A selecting mergers that have occurred in India in both banking and manufacturing sectors for the last decade. The empirical studies will be based on the event study methodology.

### **1.3 Research Question**

The main issue that needs to be answered by this study is that: Do M&A (M&A) create shareholder wealth in India? Therefore, for this study to adequately address this fundamental question, the three critical questions must be answered by the research include:

1. How the company's shareholder's wealth is affected by M&A in both the banking and manufacturing sector?
2. What are the dynamics and consequences of abnormal returns in post M&A in both sectors?
3. What is the impact of M&A on shares valuations?

### **1.4 The objective of the study**

The objective of the study is to determine the effect of M&A on shareholders wealth of both manufacturing and banking industries in India.

### **1.5 Significance of the study**

#### **1.5.1 Business world**

The subject of M&A is essential in the business world since companies are driven by different reasons to engage in M&A. The decision by companies to participate in M&A is fuelled by the following reasons; First, the most important reason for businesses to enter into mergers and acquisition agreements in India is for growth (Nguyen, Yung, and Sun, 2012, p.p. 1360). Geographical expansion, hiring on new personnel, new product development falls under

organic growth. However, inorganic growth may involve M&A with another firm, joint ventures, franchising, and strategic. In addition to growth, M&A also increase access to the market base for the company (Pradhan and Abraham, 2005, pp. 18).

Secondly, companies in the corporate world indulge in M&As for synergy purposes. Jyrki (2002, pp. 11), defines synergy as the ability of corporate companies to combine to reduce costs as a result of tax advantages while at the same time becoming more profitable than existing as individual firms. When a business engages in M&A, the likely synergies achieved are both Operating and Financial synergy (Pradhan and Abraham, 2005, pp. 17). While operating synergy comprises of both economies of scope and economies of scale, financial synergy can lower the cost of capital while increasing shareholder's wealth.

Finally, significant changes in both local and global markets have been brought by the emergence of the era of knowledge. It plays a crucial role in transferring resources from targets company to the acquirer (Jyrki, 2002, pp. 11). At present times, the value of knowledge-based, intangible incomes has grown geometrically in corporations. Additionally, the incompetent managers are replaced by more competent ones as a result of mergers; hence, knowledge capital value is transferred in the process, this creates a situation where human capital combines with structural and customer capital (Jyrki, 2002, pp. 12). Knowledge is highly associated with changes in competitive, legal, and global requirements.

### **1.5.2 Investors**

The knowledge from reading this dissertation proposal is essential for managers to make decisions on M&A. The shareholder's wealth will be maximized through viable investment decisions. The researchers will benefit from the study because the information will expand on the existing theoretical framework on M&A and therefore laying a basis for future research findings by identifying and filling research gaps.

### **1.5.3 Academicians and Financial Advisors**

The knowledge acquired is utilized in the accounting profession to determine the projected cash flows and earnings, specifically in a post-merger entity. The knowledge of mergers and acquisition is essential in future accounting career prospects since it will be used when preparing books of accounts in a post-merger.



## CHAPTER TWO

### LITERATURE REVIEW

#### **2.1 Introduction**

There are several studies that have been done to measure how the market responds to the announcement of a merger or an acquisition in relation to the creation of wealth for banking and manufacturing sector in India. The abnormal returns (AR), on the other hand, are used extensively in the literature to determine how the market responds and in the study of the motives for M&A (Rani, Yadav and Jain, 2011, p.43). The AR basically reflect on the value that a merger or acquisition creates for shareholders. The business community benefits greatly from the nature of the role played by the M&A. Varied and numerous studies have been done globally in order to find out its impact on shareholders wealth. However, several theories have been advanced to test empirical validation.

Several experts have studied the impact of mergers in isolation, but none has endeavored to find out whether the returns of shareholders are the same for both banking and manufacturing industries in a post-merger (Rani, Yadav and Jain, 2011, p. 43). The creation of the shareholders' wealth still remains a critical question. In order to analyze the success of M&A, there are several measures that have been proposed, which include both short- and long-term impacts of the merger announcements, effects on the creation of wealth. When analyzing the effects of M&A on shareholders wealth, the analysis can be done different points of view, such as the target company, the acquired, and the whole firm.

The empirical evidence clearly suggests that the target shareholders always gain wealth in the process of a merger regardless of whether its banking or manufacturing sector. Therefore, this dissertation paper will likely focus on the wealth creation or destruction for shareholders of the bidder companies for both industries. Under this chapter, the literature on stock

performance will be reviewed and M&A in both the banking and manufacturing sectors of the Indian economy.

## **2.2 Theoretical Review of M&A**

### **2.2.1 Wealth Increasing Theories**

The theory of wealth increasing postulates that synergy occurs as a result of merger or acquisitions between the bidder and the target company which translates to the creation of wealth for the shareholders (Hitt et al., 2001, p. 81). Some of the wealth increasing theories include Efficiency theory, corporate control, and market power theory. The proponents of market power theory state that the companies accrue significant and positive benefits as a result of increased allocative synergy from M&A (Jyrki, 2002, p. 12). *Ceteris paribus*, the higher prices are being charged by the firms that have substantial market power and therefore earning high-profit margin resulting from the consumer surplus. The decision to merge for companies is mainly caused by the desire to have more market power to control the prices. The abnormal profits are the end result when the company attains the monopoly status in the market. Additionally, a large merger or an acquisition, the economies of scale would exist, and therefore the company would set the prices abnormally which would translate to prices being above the marginal cost hence deterring the competitors from entering into the market.

The findings of several studies have suggested that there are decreased sales and increased profits during a post-merger or an acquisition. These findings may be interpreted to mean that allocative synergy and market power increases in post-merger in both sectors of banking and manufacturing (Hitt et al., 2001, p. 81). The dynamic point of view suggests that market power is meant to prevent new entrants into the market, which gives a firm a significant premium and so offering resource gain for a long time. Although it may not be too obvious why companies from each sector engage in M&A since few bidder companies announce their

motives for a merger. Market power is a popular motive for companies to engage in mergers due to the dominant horizontal mergers in both sectors of the Indian economy (Jyrki, 2002, p. 12).

The efficiency theory postulates that parties will only engage in a merger if the transaction is determined that it will generate synergy enough to benefit both parties. The expectations of gains are mutually balanced, which results in a reasonably beneficial deal between both the acquired and target entity. The positive value gain must be realized in the process of a merger, or otherwise, there would be no merger deal offer. There should be positive returns to both the acquirer and target as wealth creation predicted by the efficiency theory as evidenced by Banerjee and Eckard (1998, p.809) and Klein (2001, p. 755).

The conclusion on the merger in both banking and manufacturing sectors of the Indian economy is examined by the theory of corporate control which only works in an efficient merger market (Hitt, Harrison and Ireland, 2001, p. 82). This theory works beyond only the synergistic gains and tries to look at how the merger deals create the shareholders' wealth. According to the proponents of this theory, there is always a party willing to acquire another firm or fire the management who have failed to maximize on creating shareholders wealth by improving on the performance of the assets through the synergy (Jyrki, 2002, p. 12).

The theory states that firms whether banks or manufacturing firm would only entrust to the individual team who have the ability to create high wealth for shareholders and they can only be replaced by another team that discovers other ways to create wealth from the assets. Therefore, the market for corporate control is supplied by the inefficient managers and managers that do maximize on the resources offered by the firm in creating wealth will not survive (Manne, 1965, p. 12). The hostile takeovers would be able to eliminate them from their positions even if the competitive market forces on input and product market fails.

From the acquirer point of view, the corporate control theory is partially based on the efficiency theory. Nevertheless, there are essential differences from the bidder's company point of view, the theory of corporate control is partly based on efficiency theory, although there are two significant differences. The existence of synergies is not assumed between the corporate assets but rather between bidder managerial capabilities and targets on both banks and manufacturing sectors. Therefore, the managerial efficiencies are predicted by the corporate control theory from the assets which are underutilized. Secondly, the takeover attempts are likely to be resisted by the target's management team, and its managerial inefficiency is the major hindrance to better utilization of resources (Jyrki, 2002, p. 12).

### **2.2.2 The Value-Destroying Theories**

Some mergers fail to create wealth for shareholders, which are suggested to be between 60%, and 80% are classified as failures. There are several wealth-destroying theories that have been put forward that have been advanced to explain the phenomenon of M&A in both the manufacturing and banking sectors of the Indian economy. The effects of M&A on shareholders wealth of the combined firms remains nevertheless, at best "inconclusive" and a worst-case scenario "systematically detrimental."

The theories of wealth destruction can be categorized into two groups as it operates under the assumption that bidders firm management is boundedly rational to make the decision and they are ready to ready to incur the expense as a result of the mistakes they make in decisions. Secondly, it assumes that the value of the firm's wealth is not affected positively despite them utilizing the private utility function. The second assumes rational but self-serving managers, who maximize a private utility function, which at least fails to affect firm value positively.

The presence of free cash flow and excess liquidity are the main factors that drive unproductive acquisitions as opposed to overconfidence. A firm whether a bank or manufacturing firm with excess internal funds is required to gain on the net present value of the investments, the firms in this state are likely to rush into making quick strategic decisions without considering their cash trapped competitors (Martynova and Renneboog, 2008). The high levels of liquidity of these firms are likely to increase the discretion of the manager in making decisions. Hence, they might end up selecting the poor acquisitions when they ran out of the good ones (Martynova and Renneboog, 2008).

According to several empirical studies, the takeover announcements always leads to abnormal share reaction, which leads to decreases the amount of free cash flow held by the acquiring company. Furthermore, it is proposed that the other shareholders in the firm will be more likely to give the administration the benefit of the doubt in such circumstances and to support the acquisition plans on the basis of fuzzy and subjective concepts (Raghavendra Rau, 1998). Therefore, similarly to the hubris theory, the FCF theory postulates that some of the good-intentioned managers would otherwise make bad decisions because the nature of their choices is less challenged and not out of malicious intentions (Sehleanu, 2013, p.596).

The FCF increases the degree of the managerial discretion, or in valuations of high market or in other representations, this gives the self-interested managers an opportunity to pursue self-serving acquisitions. Generally, it is agreed that self-interest of the managers does not play any role in M&A, recent research has that the acquiring company returns are usually higher when the manager of the combined firm is a majority shareholder, and lower when management is the minority shareholder (Lang, Stulz and Walkling, 1991). When the managers are involved mainly financially, they tend to pay more attention to the nature of the acquisition. Additionally, this theory seems supports the concept of agency costs and the managerial

theories of the firm which generally proposes that managers tend to pursue selfish interest acquisitions which leads to the destruction of shareholders wealth (Sehleanu, 2013, p. 596).

One of the reasons for the manager's entrenchment includes the ability to create more power, wealth, fame, and reputation. The process and ways in which the objectives of the organization would be achieved is explained in the entrenchment theory, the theory of empire building and other related concepts. Empire theory states that the managers are driven to invest in the creation of wealth for the shareholders, and growth of the assets, subject to minimum profit requirement. According to Sehleanu (2013, p. 597), mergers serve as special purpose vehicles for growth maximization. The analysis of the third merger wave demonstrates that the growth of mergers through M&A is explained by managerial power, which is replaced by the profit maximization motive as the motivation behind the behavior of large corporations.

Managerial hubris theory postulates that the manager may have the interest of the shareholders at heart as far as the creation of wealth is concerned when making a decision about a merger or an acquisition, but as a result of being overconfident, they overestimate the abilities to create the synergy (Roll, 1986). The winner is the bidder who makes the highest estimate of its value. If we assume that the average bid is accurate, the winning bidder overpays (Malmendier and Tate, 2002). The hubris theory predicts the decrease in value after the announcement of the merger (Roll, 1986, p. 206).

Managerial entrenchment theory asserts that mergers fail because managers mainly make investments decisions that tend to minimize replacement risks. This theory suggests that managers chase after the investment projects with an objective of not only maximizing the value of the enterprise but in an effort to establish themselves as opposed to increasing the shareholders' wealth of the firm (Sehleanu, 2013, p. 597). The managers that tend to value their own interest at the expense of the shareholders will manage to make the decisions that will

make it more costly for the shareholders to replace them and therefore reducing the value. This notion has been supported empirically and thus seems to suggest that the managers pursue diversifying mergers in order to decrease the earnings volatility, which tends to enhance the survival in the corporate world. During the third merger wave in the United States, the policy of M&A was mainly on risk diversification played a vital role as a motive. Before the 1980s, the shareholders' concerns were the least focus for the managers who were considering entering M&A.

### **2.2.3 The Value-Neutral Theories**

A merger can occur in a neutral circumstance where there are no effects on the value. The merger can only happen if the amount that has been offered by the bidder firm is higher than the target value of the firm. Wealth is transferred from the shareholders of the target firm to the bidding firm. According to Roll (1986, p. 212), the value of the firm is not affected under the hubris hypothesis. "the hubris hypothesis can serve as the null hypothesis of corporate takeovers" (Roll, 1986). The corporate takeovers are explained by the hubris hypothesis under this theory. The high bids are placed by the managers who are excessively over or self-confident to acquire the firms. The value of the target firm is distributed through a competitive bidding process, and therefore, the bidding process is won by the manager who is forecasting optimistically. The target is overvalued by the target winning bid and therefore cursed. The individual management decision-makers with hubris in bidding firms are likely to explain why the bids are offered even when they are above the market prices when they have positive valuation error. Hubris affects the bidding firms, which eventually leads them to pay too much for their targets. The empirical evidence presented in M&A in India is analyzed in hubris context.

### **2.3 Empirical Studies on M&A.**

### **2.3.1 Mergers and Acquisition trends India in the banking and manufacturing sectors.**

M&A in India exhibit four major trends according to the Forbes, which include: liquidity abundance, debts cost rising slowly, technology, and energy leading the way. The major support that is provided by the government and politically for the growth of the business. M&A in recent years have been consistent and stable in both the banking and manufacturing sectors of the Indian economy against all the odds. The performance is driven mainly by the strength of the domestic economy and international growth.

Additionally, the sector-wise analysis as segregated into banking and manufacturing sectors. Also, the classification of industries for trend analysis is attained in terms of shares prices reaction for different sectors. But primarily it can be divided into a sector-wise analysis of trends of M&A in India. The overall trend analysis can be presented in a time-series model data from 2010-2019 is used. These two sectors are ideal for the study since they have been experiencing a significant number of M&A in the Indian economy since the 1990s.

In most economical systems, industrial growth has mainly been fueled by M&A. However, in India, the phenomenon has become regular in both sectors. A set of forces drives the present wave of M&A due to the introduction of the economic system. The number of domestic M&A has dramatically increased due to the substantial growth in the corporate sector in India since 1990.

### **2.3.2 Event Study Methodology studies**

Event studies refer to a method in which the AR of both the target and bidder is examined around the date of the announcement for an M&A to determine the effect on shareholders wealth. The event studies include completed, pending, and unsuccessful transactions. The bidding firms' activities usually record a positive net present value (Asquith,



Bruner, and Mullins, 1983). The cumulative abnormal return (CAR) is statistically significant, and hence, the acquiring firm shareholders get positive returns.

The wealth that is created for shareholders for both manufacturing and banking sector is predicted using an event study methodology. The resulting wealth is created as a result of M&A. The assumption in this method is that the stock market is efficient and therefore, abnormal security returns for both the bidder and target firms (Duso, Gugler and Yurtoglu, 2007, p. 1). The economic impact of M&A event is represented by the company's systematic risk and movements of the securities (Rani, Yadav and Jain, 2011, p. 45). Some studies based on the market that we're focused on other countries have concluded that the target firms receive significant gains in shareholders wealth. This dissertation intends to use event study methodology to find the effects on both the target and bidder shareholders. This methodology is essential in examining the share price reaction in the market as a result of M&A using the traditional market model with value-weighted market index (BSE SENSEX) has been used to estimate abnormal return (Rani, Yadav and Jain, 2011, p. 44).

When using event study, the major problem that is likely to be encountered is that the market valuations changes at the time of a merger or an acquisition which does not only reflecting efficiently operating corporate control market but other factors such as overvaluation for those acquiring the firm. When the random valuation errors are incorporated in shareholders wealth any particular time, a firm may be overvalued or undervalued. In the latter case, the acquisition may happen, and the target firm may experience a rise in the price of the shares, which does not reflect efficiency gains from a merger but only a market correction. Also, the event study method is not a reliable method since it is the long-term results that count.

The study intends to analyze the share price reaction of the acquirer and target companies from both manufacturing and banking sector of the Indian economy. This will

involve undertaking the daily return of the companies from the stock exchange to find out how the stock prices are responded to the merger announcements. Based on the past studies, there is a significant improvement of shareholders wealth during post-merger compared to pre-merger for the target companies. The regression analysis model is then used to establish a relationship between the shareholder's wealth and M&A. All the M&A in India is anticipated by the stock market. Both banking and manufacturing industry experience a different effect on the share price of the stock market when the companies merge. This is because Mergers involving firms in the manufacturing sectors is affected by different performance economic factors from the banking industry, therefore, using the event study method, we might be able to find significant differences during the pre and post-financial crisis. The financial crisis affected the purchase and sale of assets globally, and therefore, M&A deals during pre-crisis were considerably low compared to post-crisis after the crisis emerging markets have taken advantage of the attractive asset prices in India and increased their acquisitions which eventually translates to high stock prices.

**Table 2.1: Sampled Manufacturing and Banking deals**

<b>Banking Sector</b>			
<b>Year of Merged</b>	<b>Name of the Acquired</b>	<b>Name of the Merged</b>	<b>Date Approved</b>
2019	Bank of Baroda	Vijaya Bank	1 <sup>st</sup> April 2019
2017	State Bank of India	Bhartiya Mahila Bank	3 <sup>rd</sup> April 2017
2014	Kotak Mahindra Bank	ING Vyasa Bank	20 <sup>th</sup> Nov 2014
2010	ICICI Bank	Bank of Rajasthan	23 <sup>rd</sup> May 2010
2017	State Bank of India	State Bank of Hyderabad	26 <sup>th</sup> May 2017
<b>Manufacturing Sector</b>			
2018	Motherson Sumi Systems	Reydel Automotive Group	2 <sup>nd</sup> April 2018
2019	Reliance Industries	Hamleys PLC	10 <sup>th</sup> May 2010
2011	United Breweries	Chennai Breweries Pvt Ltd	10 <sup>th</sup> March 2011

2018	Tata Steel Ltd.	Tata Steel BSL	18 May 2018
2015	TVS Srichakra	Michelin	9 June 2015

The average AR are done across the firms from the above two sectors (where  $t=0$  is the day of the merger or acquisition was approved or announced), and Cumulative AR (CARs) are calculated bearing the assumption that for the rest of the event window. The period of estimation is constructed for a defined period of time from  $t -10$  to  $t+10$ . The study intends to find out the effect of M&A of the shareholders' wealth by accumulating the AR over a period of 11 days. This dissertation uses the measure of AR for varied sets of time on the windows. The event window of 11days is suitable for this study since they are appropriate for capturing any information that has been leaked prior to the merger event or official announcement. The event window is also the best way to capture any stock reactions on a short-term level. Furthermore, some other event window lengths were analyzed to determine the outcomes. The event of interest may be tampered with if the long event windows are used. When determining the shareholder's wealth, the stock market is used as opposed to the bond market. This is primarily because it returns to the owners of the firm take form of periodic dividends which is being issued from the sale of the stock.

## 2.4 Chapter Summary

The reviewed literature postulates that there is a significant increase in the shareholders' wealth in post-merger and acquisition of banks. This study hypothesized that there is an improvement in the shareholders' wealth in post announcement of merger and acquisition in both the banking and manufacturing sectors. This is based on the fact that the stock performance and pool of technical resources in a post-merger boost the investors' confidence. To seek the answer to the above question, the dissertation aims to find out the effects of M&A on shareholders wealth in India by looking at the event study of banking and manufacturing sectors.



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### **3.1 Introduction**

This section of the dissertation highlights the design that is to be followed to find out the impact of mergers and acquisition (M&A) in both banking and manufacturing industries on shareholders wealth in India. This section entails research design, the population of the study, data gathering instruments, and analysis of data.

#### **3.2 Participants**

The study will be analyzing the banking and manufacturing sectors of the Indian economy. The M&A deals from both the manufacturing and banking sectors from 2010-2019. Table 3.1 below shows five listed companies that have undergone M&A, which forms the population sample. The Population sample of the research was obtained from the stock traders and personnel working in the M&A department from the five firms that have undergone acquisition for the last decade. Furthermore, all the acquiring companies were listed on the Bombay stock exchange (BSE). The data will be collected from the sampled size selected from the listed companies, which will provide information about the pre and post-merger effects on the value of the shares.

The sample data on the M&A deals were obtained from Bombay Stock Exchange and Business Beacon, National Stock Exchange Publications, CMIE Prowess, EMIS Database, and Securities Exchange Board of India (SEBI) Reports, Financial reports. The study employed the market model to establish the effect of M&A on stockholders' wealth. Hence, when observing a stock market reaction to the announcement of a particular event (M&A), the firms value of the equity changes is affected by this event can then be taken as a measure of the (discounted) additional wealth that they are projected to accrue as a result of the event (M&A). For this

study, 5 BSE listed banks (Sample size) and manufacturing firms involved in M&A deals between 2010 and 2019 will be selected (Table 3.1).

**Table 3. 1: Sample of M&A in India**

<b>Banking Industry</b>			
<b>Year of Merged</b>	<b>Acquired Banks</b>	<b>Merged Banks</b>	<b>Date Approved</b>
2019	Bank of Baroda	Vijaya Bank	1 <sup>st</sup> April 2019
2017	State Bank of India	Bhartiya Mahila Bank	3 <sup>rd</sup> April 2017
2014	Kotak Mahindra Bank	ING Vyasa Bank	20 <sup>th</sup> November 2014
2010	ICICI Bank	Bank of Rajasthan	23 <sup>rd</sup> May 2010
2017	State Bank of India	State Bank of Hyderabad	26 <sup>th</sup> May 2017
<b>Manufacturing Sector</b>			
2018	Motherson Sumi Systems	Reydel Automotive Group	2 <sup>nd</sup> April 2018
2019	Reliance Industries	Hamleys PLC	10 <sup>th</sup> May 2010
2011	United Breweries	Chennai Breweries Ltd	10 <sup>th</sup> March 2011
2018	Tata Steel Ltd.	Tata steel BSL	18 May 2018
2015	TVS Srichakra	Michelin	9 June 2015

Source: EMIS Database

### **3.3 Sample Size**

The dissertation was confined to mergers and acquisitions cases in both the banking and manufacturing sectors during the period between 2010-2019. The mergers from both sectors were chosen because the shareholder's wealth is affected by different economic, environmental factors compared to other industries. The period was selected in such a manner so that there is a reasonable period to conclude post-merger shareholders wealth. Therefore, the M&A that were considered comprise of the ones in which the data is available.

The data was drawn from the sample size of two industries in India. The two industries were involved in the research include Banking and Manufacturing sector. The five mergers from each segment were studied for ascertaining the impact that M&A have on stockholders' wealth. The total sample of the companies that were involved in the research was 20 from which ten would be the acquiring companies while the other ten would be the target firms. The size of the sample is chosen is easy and is based on the convenience and not by any means of analysis of the statistical.

### **3.3.1 Data Collection**

The data for the enquiry was obtained mainly from the secondary sources. The information on the stock prices was obtained from the Bombay Stock Exchange (BSE) database, and the banks yearly reports, financial statements for the ten years between 2010-2019. These were obtained from observation that was centered prior to the merger (-5) and five days after the merger (+5).

### **3.3.2 Secondary collection of data.**

The information that is already in the market is referred to as secondary data. This type of information is historical in nature, which can be referred to as data which was collected by someone else for some other purpose. The research would involve collecting data from purely secondary sources. It involves collecting financial data of the respective companies that are involved for days before and after the M&A. The secondary sources such as annual reports, search engines such as moneycontrol.com, Analysts reports would be involved in collecting the data

### 3.4 Design

The event study methodology was the research design that was adopted in this study. This method involves testing on the effects of an unexpected or a new business event, in this case, a M&A on shareholders wealth of the firm. Mackinlay (1997) states that the event study methodology involves finding the event of interest, identifying the date of the event, determining the event windows, assessment period, selecting a model for computing the abnormal returns (AR), accumulation of abnormal returns (AAR), applying significance and statistical tests to the data provided and based on the significance and overall findings the conclusions are drawn. The short-term stock price reaction of the M&A announcements is examined by the event study methodology. The AR are estimated using the traditional model of the market with a value-weighted market index (BSE SENSEX).

The major strategies for competitiveness are explored by both the banking and manufacturing sectors of the economy, along with the determinants of abnormal returns. The paper will focus on M&A events in both banking and manufacturing industry as this industry seems to be aggressively using M&A to hasten growth and therefore, they are likely to witness AR in short-term. The manufacturing industry differ from other industries because of the high production costs for goods and bringing to the market and documenting the low rates for manufactured goods. M&A are used by the company to complement for early-stage research, and therefore, the potential for abnormal returns is substantial. The two industry sectors have been chosen because of their universal nature, involvement extensively in mergers and the likelihood of gaining the AR in the short run. The period of study is between 2010-2019.



### 3.5 Event Study Methodology

The event study involved determining the characteristics of prices of stock around the dates of the announcement. The primary method that is used to determine the characteristics of share prices at the approval dates is the event study method. The effects on stock prices are determined through the measuring of the cumulative average AR during the event window. When the CAAR is positive, it denotes that gain in wealth on shareholder as a result of improved performance (Mackinlay, 1997, p.27). However, when the CAAR is negative, it indicates that CAAR has a negative effect on shareholders wealth.

When conducting this research, the event study involved three stages. In the first step, the information obtained from the SDC is used to determine the approval date. The second step involves selecting the model of the market as the benchmark to determine the abnormal stock returns. A suitable parameter is selected through several methods. In this research, the average return over the period is used. The price of the stock movements is taken into account in the market-adjusted returns method. The return on market share index is used to calculate the normal returns. Using a value-weighted or equally weighted index makes no differences in this method.

Finally, the third step involves calculating the AR and analyzed. The AR for both the bidder and the target firm are calculated. In the event that the target firm is not listed then there will be no calculation of the AR. The standard event study method is used where the event window comprises of 11 days. It is vital to use the small event window because M&As effects on shareholders wealth can easily be determined statistically from traditional short event window studies. In this study, both the target and bidder company determine the abnormal stock returns. Furthermore, the chances of other factors influencing the stock price are minimal for a small event window. AR are computed by the following formula.

$$AR_{it} = R_{it} - NR_{it}$$

Where  $R_{it}$  represents the return on the stock during the window event and  $NR_{it}$  represents the normal return. Considering the extensive price movements of capital in the market, the normal

$$NR_{it} = R_{mt}$$

yields are estimated using market-adjusted returns.

$R_{mt}$  is computed by the value-weighted market share index return, and the estimation window consists of a [-5, +5] day interval. Within this event window, all daily market returns are calculated, and the average is equated to normal returns. Then both the CAAR and cumulative abnormal return (CAR) computed.

A t-test is performed, as shown in Table 3.2 below to find out whether there is a significant difference from zero. The statistical test is essential to determine whether M&A has a substantial influence on the share price.

The null hypothesis is that the cumulative price is expected to change over the event window is zero. However, the CAAR is expected to be different from zero for the alternative hypothesis. The standard normal distribution for CAR is mutually uncorrelated is followed in a t-test.

**Table 3.2: Market Adjusted Abnormal Return**

Merger	MAARt (t=-5 days)	MAARt (t= day 0)	MAAR (t= +5days)	CARt 11 days
Bank of Baroda	0.01193	0.00900	-0.00153	0.05566
State Bank of India	-0.07406	0.01565	-0.00359	-0.36721
Kotak Mahindra Bank	-0.00578	0.00690	0.00147	-0.05399
ICICI Bank	-0.07730	0.00131	0.00525	-0.37882
State Bank of India	0.25831	-0.01447	0.00252	1.29640
Motherson Sumi Systems	0.01120	-0.00895	0.00332	0.06497
Reliance Industries	-0.11050	0.03548	-0.00609	-0.53134
United Breweries	0.02546	-0.00721	-0.00176	0.09715
Tata Steel Ltd.	0.21018	0.0095	0.00052	0.09715
TVS Srichakra	-0.05857	0.00188	0.00188	-0.28420

H0: There was no significant increase in CARt over the event window

H1: There was significant increase in CARt over the event window

	<i>MAARt (t= day 0)</i>	<i>CARt 11 days</i>
Mean	0.004909	-0.000424981
Variance	0.00020315	0.261245214
Observations	10	10
Pearson Correlation	-0.680208657	
Hypothesized Mean Difference	0	
df	9	
t Stat	0.032380186	
P(T<=t) one-tail	0.487437797	
t Critical one-tail	1.833112933	
P(T<=t) two-tail	0.974875593	
t Critical two-tail	2.262157163	

### 3.6 Procedure

Brown and Warner (1985) claimed that the event study model of the market used in the analysis to find out the effects of M&A on shareholders wealth. This method is based on the central concept that the future profit values is represented by the stock prices. Therefore, when analyzing the reaction of the stock market to the approval of M&A in both manufacturing and banking industry (Liargovas and Repousis, 2011, p.91). The change in equity value can be interpreted to measure the added wealth that they are expected to accrue as a result of the event. The market model abnormal returns in the event-window around the event date are calculated using the expected returns of a market model (Jakobsen and Voetmann, 2003, p.7). The average accumulative returns are calculated using the expected and actual returns.

The event study methodology involves a step by step procedure involving: The first step process involves determining the sample of the companies from both banking and manufacturing sector are included for analysis and also determining the event window (Liargovas and Repousis, 2011, p. 91). For the purpose of this dissertation, BSE listed companies from both sectors that undergo the merger & acquisition between 2010-2019 are

selected. The approval dates were sourced from various bulletins. So as to avoid the effect on other factors on share prices, the announcements that are related to earnings and dividends were excluded.

The next phase of the event study methodology involves choosing symmetric event windows, the total of 11 days comprising of the five days prior to the event, and five days after the event. The event windows selected considered the short-term reactions of the share price to the market and also to capture any information that might have leaked to the market shortly before the merger approval. Furthermore, the analysis was done for other event windows to check the results. The setback in using event windows that are longer than other factors may come into play in determining the share price, which would prove to be challenging to isolate.

Lastly, event study methodology involves predicting the normal returns during the event windows and without the event. The model that is being used in this research to approximate the expected returns was the market model (Liargovas and Repousis, 2011). The model is a linear time series where the dependent variable, security returns, is regressed against the percentage changes in market share index. The model of the market used in this research for security  $i$  for the time  $t$  can be expressed by using the linear time-series model.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \dots \dots \dots (1)$$

Where;

$R_{it}$  = daily return during time  $t$  on the security  $I$

$\alpha_i, \beta_i$  = are model of the market parameters for security  $I$ , specific security intercept and slope coefficients

$R_{mt}$  = return of the market index (SENSEX index) for time  $t$

$e_{it}$  = error term for security  $I$  for year  $j$  at period  $t$ .

It is presumed that  $e_{it}$  satisfies the expectations of linear regression model. Over the regression period,  $e_{it}$  has the mean of zero. Additionally, the variance is independent of the time. The estimates are yielded by  $\beta_i$ , which represents the elasticity of returns on the share market index. In finance literature, it is conventional for both sides of the market model to be expressed as investment portfolios with zero returns. When both sides of the market model have zero investment portfolios, then the specification test that is useful in this case is the null hypothesis.  $H_0: \alpha = 0$ . The parameters ( $\alpha, \beta$ ) are estimated using the returns in a period of 48 months before the event window (Jakobsen and Voetmann, 2003, p. 6).

The fourth procedure in the event study methodology process involves computation of the AR. The AR is calculated by calculating the difference between the predicted and actual returns. Using the market model, the AR for firm  $i$  given by  $e_{it}$  on day  $t$  is the difference with expected returns. Therefore, it usually represents the effect on a specific event of the firm on shareholders wealth and net effects of the market. If M&A has an impact on shareholders wealth gain or loss, the value of  $e_{it}$  should be different from zero. The equation below can be used in the calculation.

$$e_{it} = (R_{it} - \alpha_i) - \beta_i R_{mt} \dots \dots \dots (2)$$

The equation above is used to compute the daily residuals for various companies from each sector of both the banking and manufacturing sectors of India over the event windows. Then, the average residuals mean AR ( $MAR_t$ ) for any day  $t$  within the event period the average residuals mean abnormal return across sampled companies was computed using the following equation:

$$(MAR)_{it} = \sum_{i=1}^{N_t} \frac{e_{it}}{N_t} \dots\dots\dots (3)$$

Where

$e_{at}$  = abnormal return on day  $t$  of security  $i$

$N_t$  = number of securities with AR on day  $t$

The final procedure involves calculating the cumulative AR over several holding periods from day  $t_1$  to day  $t_2$  were calculated using the following formula:

$$(CAR)_{it} = \sum_{t=t_1}^{t=t_2} MAR_{it} \dots\dots\dots (4)$$

The M&A have no effect on the respective share price under the null hypothesis, the expected value of the cumulative AR is zero. The data was subjected to a statistical test (t-test) to prove the hypothesis. The t-test that was used include the following:

$$t(AR)_{it} = \frac{(AR)_{it}}{\frac{S(e_{it})}{\sqrt{Nt}}} \dots\dots\dots (5)$$

Where

$S(e_{at})$  = represents the excess returns deviation on event period day  $t$ .

$Nt$  = representing the number of stocks in the portfolio with AR on event day  $t$ .

**Table 3.3: Model of the Research**

Model of the Research	Inputs	Outputs
Market Model	Market on stock prices	Cumulative Average Abnormal returns
	Security Returns	

### **3.6.1 Statistical tests**

The shareholder's wealth changes were determined by measuring the changes in AR in the pre and post-merger period for both industries of the Indian economy. One of the best ways to do an analysis of the variance of the techniques between the groups or periods is through t-test (Liargovas and Repousis, 2011, p. 95).

### **3.7 Ethics**

All the participants will be treated with ethical guidelines. Although there are safety issues of the participants, the individuals participating in the research they may suffer from the depression when the topic of discussion is sensitive, which may compromise their safety. This will be dealt with by allowing the participants to engage at their own discretion. Also, information on the participant who has agreed to engage would not be disclosed.

The confidentiality of the participants: This is done by setting up careful and data collection procedures that will ensure the privacy of the participants (Resnik, 2011, p. 2). The information and data that is collected about the participants will be protected. All the precautions on anonymity and confidentiality will be incorporated during the research design stage.

Justice and beneficence: The potential risks of the research outweighed the benefits, and the study aims at answering the research question through just means. There are mechanisms to handle any harm that may cause any harm or discomfort as a result of participating in the research (Resnik, 2011, p. 3). The aim of the research should benefit the participant rather than doing harm.

### **3.8 Data Analysis**

This study aims at establishing the causal effects of M&A on shareholders wealth creation in India. The link between the two variables will be analyzed by regression analysis. A regression line will be drawn to find the market return on shareholders wealth in pre and post-merger to find out how they are affected in pre and post-merger. Quantitative data will be analyzed using Excel. Since the research takes a quantitative approach, the focus will be to link the M&A to shareholder wealth creation. Identifying the ideas that are related to the subject matter through thematic coding will be used as a data analysis technique.



## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This section of the dissertation highlights the examination of the data that was gathered from various sources. The major findings are presented in the form of tables. The effects of M&As on shareholders wealth in both manufacturing and banking industry in India. This chapter provides various sections.

#### 4.2 Sampled Characteristics

The sample of the research comprised two sectors of the Indian economy, and from each industry consists of 5 companies for a merger. The acquiring companies included from banking sector include; Bank of Baroda, State Bank of India, Kotak Mahindra Bank, ICICI Bank, and State Bank of India. On the other hand, from the manufacturing, the acquiring firms include Motherson Sumi Systems, Reliance Industries, United Breweries, Tata Steel Ltd, and TVS Srichakra. All the acquiring companies from both banking manufacturing sectors are all listed in Bombay stock exchange. However, for banks or manufacturing firms that were not listed at the time of the merger were not included in the calculation of the AR since the market value of their shares could not be clearly established

#### 4.3 Market Reactions around the Select Event Dates

**Table 4.1: Acquiring Companies**

Market Reactions around the selected Event Dates					
Merger	Event date (T)	% change in share price		% Change in Market index	
		T-5 to T 0	T0 to T+5	T-5 to T 0	T0 to T+5
Bank of Baroda	01-Apr-19	12.27	-2.03	2.81	-0.44
State Bank of India	03-Apr-17	4.90	-1.30	2.30	-1.12
Kotak Mahindra Bank	20-Nov-14	4.21	0.08	0.45	1.32

ICICI Bank	23-May-10	-7.66	4.35	-2.17	2.88
State Bank of India	26-May-17	-6.35	-0.49	1.85	0.79
Motherson Sumi Systems	02-Apr-18	2.41	7.06	0.57	8.10
Reliance Industries	10-May-10	5.43	-5.82	-0.32	-2.86
United Breweries	10-Mar-11	-0.50	0.60	26.49	-0.97
Tata Steel Ltd.	18-May-18	-2.61	-3.91	-1.93	0.22
TVS Srichakra	09-Jun-15	-6.95	19.23	-6.95	0.78

The results table 4.1 above, 5 out of the ten sampled firms exhibited a marginal price increase in the period preceding the event date, while a similar number exhibited a minimal price slide after the event dates. The market index had marginal increments in 6 of the ten sampled mergers, except for four firms where a marginal decline was notable.

The share price index panel shows an increase in market indices prior to event date which is attributed to the increased bid activities by investors positioning themselves to gain from the benefits of the impending merger as well as the sceptical investors who engage in profit-taking. The marginal percentage declines noted after the event dates are attributed to the market correction behaviour exhibited after the major corporate announcement.

**Table 4.2: Target Companies**

Market Reactions around the selected Event Dates for Acquired Companies					
Acquisition	Event date (T)	% change in share price		% Change in Market index	
		T-5 to T 0	T0 to T+5	T-5 to T 0	T0 to T+5
Vijaya Bank	01-Apr-19	5.64	5.25	4.81	2.65
ING Vyasa Bank	20-Nov-14	7.92	-3.07	0.45	1.32
Bank of Rajasthan Ltd	24-May-10	54.25	5.92	-2.17	2.88
Tata steel BSL	18-May-18	-2.50	-4.11	-1.93	0.22

Source: Compiled from CMIE database

Table 4.2 results show that 3 out of the four sampled target firms acquisitions exhibited a marginal increase in the share price in the period preceding the event date and also 2 out of the four target companies exhibited a drastic price slide after the event dates. The market share index had marginal increments in 2 out of the four sampled target company's acquisitions.

The increase in market indices prior to event date was attributed to the increased bid activities by investors positioning themselves to gain from the benefits of the impending acquisition as well as the skeptical investors who engage in profit-taking. The marginal percentage declines noted after the event dates are attributed to the market correction behavior exhibited after the major corporate announcement (Asquith, Bruner and Mullins, 1983).

#### **4.4 Mergers and Acquisitions effects on shareholders Wealth.**

To find out how the market shares value are affected by the M&A, the daily market-adjusted AR is used. The change in the value of the individual stock exchange is shown by market-adjusted abnormal return (MAAR) after a major corporate event's approval date. Using the above equations, the MAAR was computed.

The systematic portion of the value change is obtained after deducting the percentage change in market index (average market price) (Mackinlay, 1997, p. 27). This is specific to that particular shares resulting from its merger or an acquisition with a new company formed after a merger or an acquisition, starting from the event day 0 the MAAR is computed for a period of 11 days.

A statistical test is applied as shown in Table 4.4 to establish the mean deviations values over the five days before the event days, then compared with the MAAR for five days after the event day. The mean values for the two groups are compared using the statistical test. Since the trading rules on the first day are usually relaxed, the first day is usually excluded. The rules are relaxed to allow for market forces to operate and hence determining the value of shares for a newly formed merged company. The t-test is representing to a statistic that was used to determine whether the changes in MAAR, were significantly different within the five days after the event date as well as the five days after the event date (Table 4.4).

**Table 4.3: Market Adjusted Abnormal Returns**

Company	Mean Change in MAAR over t-5 days	Mean Change in MAAR over t+5 days
Bank of Baroda	-0.01091	-0.01628
State Bank of India	0.40682	-0.02269
Kotak Mahindra Bank	0.03141	0.00034
ICICI Bank	0.36717	0.00303
State Bank of India	-1.26195	-0.00750
Motherson Sumi Systems	-0.05009	-0.00401
Reliance Industries	0.54991	-0.04540
United Breweries	0.12345	-0.00346
Tata Steel Ltd.	-1.07250	0.01788
TVS Srichakra	0.26168	0.00635

H<sub>0</sub>: There was no significant change in valuation of shares before and after the event date

H<sub>1</sub>: There was significant change in valuation of shares between pre-event and post-event dates.

\*\* Denotes significance at 1% level (P-values < 0.01)

**Table 4.4: Statistical Test for Bidder Banks**

	<i>Mean Change in MAAR over t-5 days</i>	<i>Mean Change in MAAR over t+5 days</i>
Mean	-0.093492326	-0.008620028
Variance	0.462561591	0.000118543
Observations	5	5
Pearson Correlation	-0.084248434	
Hypothesized Mean Difference	0	
df	4	
t Stat	-0.278628633	
P(T<=t) one-tail	0.39717045	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.794340899	
t Critical two-tail	2.776445105	

**Table 4.5 1: Statistical Test for Bidder Manufacturing Companies**

	<i>Mean Change in MAAR over t-5 days</i>	<i>Mean Change in MAAR over t+5 days</i>
Mean	-0.093492326	-0.008620028
Variance	0.462561591	0.000118543
Observations	5	5
Pearson Correlation	-0.084248434	
Hypothesized Mean Difference	0	
df	4	

t Stat	-0.278628633	
P(T<=t) one-tail	0.39717045	
t Critical one-tail	2.131846786	
P(T<=t) two-tail	0.794340899	
t Critical two-tail	2.776445105	

**Table 4.6: Descriptive Statistics**

<i>MAAR over t-5 days</i>		<i>MAAR over t-5 days</i>	
Mean	-0.065500912	Mean	-0.007173428
Standard Error	0.194076889	Standard Error	0.005557694
Median	0.077429855	Median	-0.003732269
Standard Deviation	0.61372501	Standard Deviation	0.017574971
Sample Variance	0.376658388	Sample Variance	0.00030888
Kurtosis	0.765951045	Kurtosis	1.702541672
Skewness	-1.364809854	Skewness	-1.038122622
Range	1.811863463	Range	0.063274165
Minimum	-1.261953166	Minimum	-0.045396801
Maximum	0.549910297	Maximum	0.017877365
Sum	-0.655009116	Sum	-0.071734284
Count	10	Count	10

The findings from Table 4.4 and 4.5 above indicate that the P-values are great when the critical test level of 1% (0.0.1). Based on the criterion, the null hypothesis is accepted; it shows that shares had not indicated any significant changes over the event windows of 11 days. It shows that no significant deviations in the shared values around the bidder companies merger events.

#### 4.5 Effects on the Shareholders Returns

The cumulative AR were the second measure that was used the total return of the investors over an event period of 11 days for each bidder company from both banking and manufacturing sector. T-test was used against the value of zero to find out the changes in cumulated AR. This was to establish whether there was a significant gain or not (Table 4.8).

**Table 4.7: Market Adjusted and Cumulative Abnormal Returns**

<b>Market Adjusted and Cumulative Abnormal Returns</b>				
<b>Merger</b>	<b>MAARt (t=-5 days)</b>	<b>MAARt (t= day 0)</b>	<b>MAAR (t= +5days)</b>	<b>CARt 11 days</b>

Bank of Baroda	0.01193	0.00900	-0.00153	0.05566
State Bank of India	-0.07406	0.01565	-0.00359	-0.36721
Kotak Mahindra Bank	-0.00578	0.00690	0.00147	-0.05399
ICICI Bank	-0.07730	0.00131	0.00525	-0.37882
State Bank of India	0.25831	-0.01447	0.00252	1.29640
Motherson Sumi Systems	0.01120	-0.00895	0.00332	0.06497
Reliance Industries	-0.11050	0.03548	-0.00609	-0.53134
United Breweries	0.02546	-0.00721	-0.00176	0.09715
Tata Steel Ltd.	0.21018	0.0095	0.00052	0.09715
TVS Srichakra	-0.05857	0.00188	0.00188	-0.28420

$H_0$ : There was no significant increase in CARt over the event window

$H_1$ : There was significant increase in CARt over the event window

**Table 4.8: Statistical Test**

	<i>MAARt (t= day 0)</i>	<i>CARt 11 days</i>
Mean	0.004909	-0.000424981
Variance	0.00020315	0.261245214
Observations	10	10
Pearson Correlation	-0.680208657	
Hypothesized Mean Difference	0	
df	9	
t Stat	0.032380186	
P(T<=t) one-tail	0.487437797	
t Critical one-tail	1.833112933	
P(T<=t) two-tail	0.974875593	
t Critical two-tail	2.262157163	

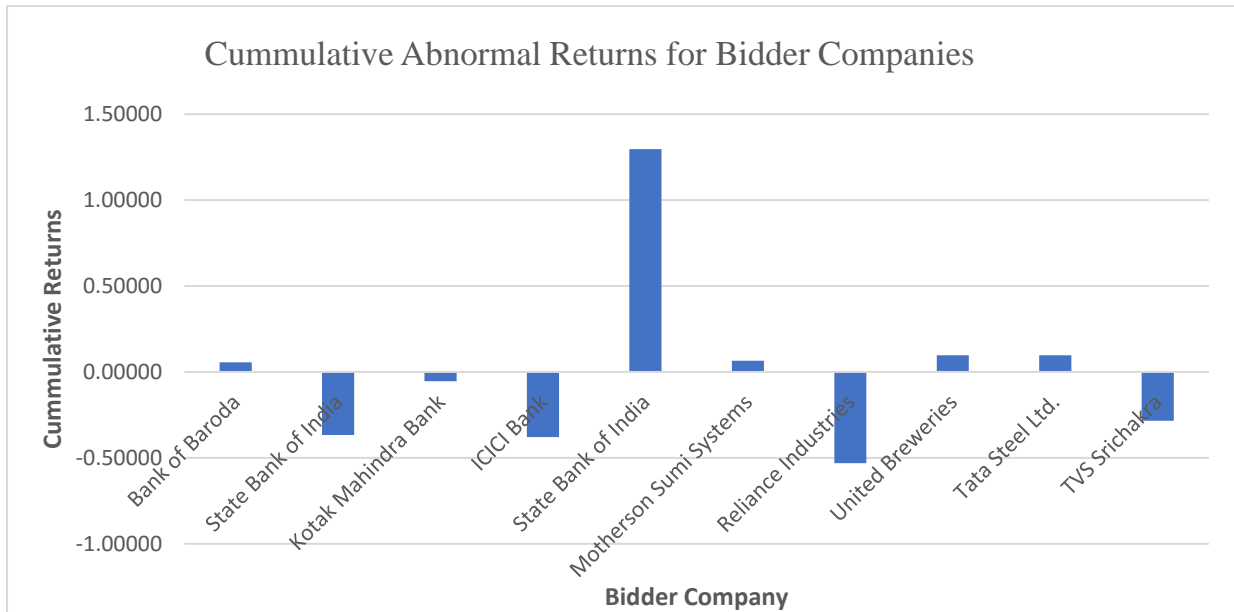
The table above shows the mixed findings for each individual firm from the two sectors.

Mergers for three of the banks, and two of the manufacturing firms accepts the null hypothesis.

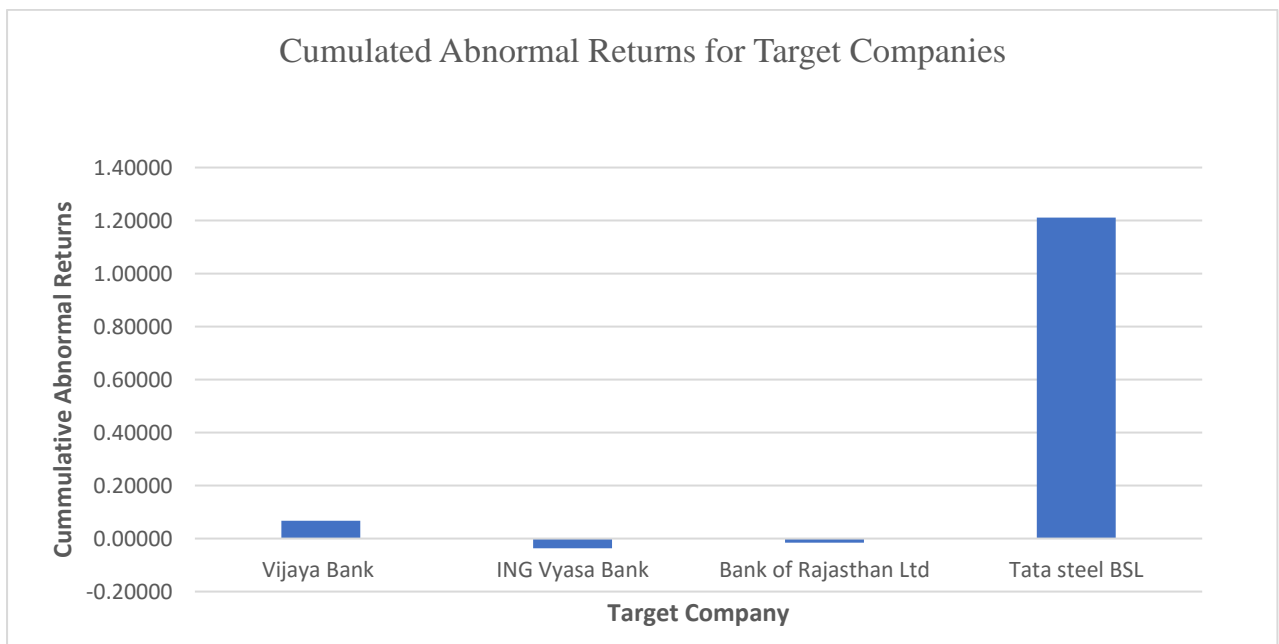
However, for others, there was a significant creation of wealth for the shareholders.

## 4.6 Data Presentation

**Figure 4.1: CAR for Bidder Companies**

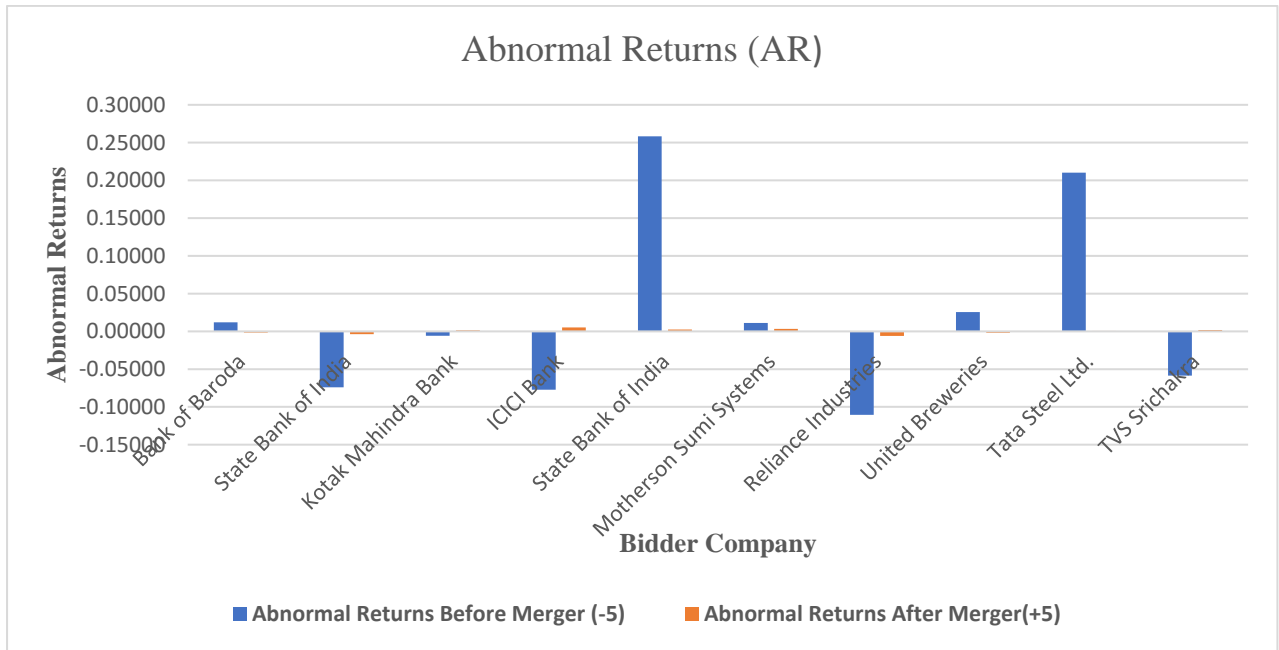


**Figure 4.2: CAR for Target Companies**



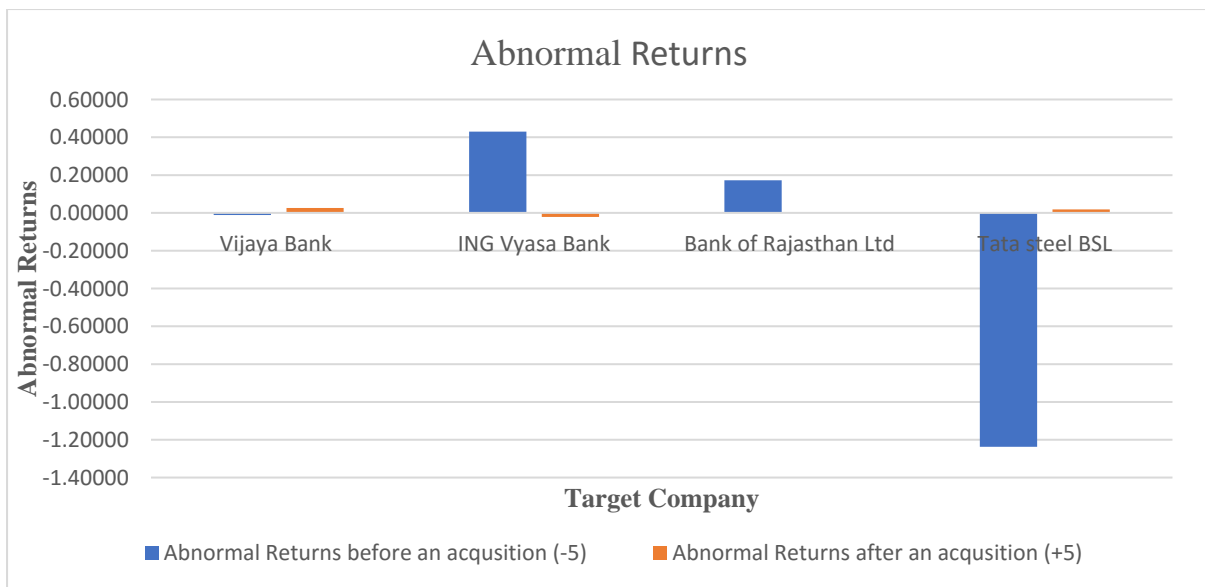
The graphical represents the behaviour of various companies from both banking and manufacturing sectors of Indian economy. The event window that has been used for this particular research is 11 days which comprises of - 5 days before and +5 after the merger. The share prices are given in time series model appendix 2.

**Figure 4.3: Abnormal Returns for Bidder Company**



Using the equation 2 to get both abnormal and expected returns, then getting cumulative AR. The statistical test (T-test) is performed to yield CAR which would be compared with the tables of critical values.

**Figure 4.4 Abnormal Returns for Target Companies**



**4.7 Discussion of Research Findings**

This dissertation was intended to find out how M&A in the banking and manufacturing sectors create shareholders wealth. Table 4.7 analyses whether both bidding manufacturing and banking companies experienced any capital gains as a result of selling shares in the stock



market over the event windows. It is also used to find out whether the market displayed bullish or bearish over the event windows. From the results obtained the shareholders of both banking manufacturing bidder companies experienced positive cumulative AR five days before (-5;0). When taken at the statistical significance of 5%, 3 out of 5 banks exhibited a significant capital gain compared to 2 out of 5 in the manufacturing bidder companies. For target selected target companies, 2 out of 4 sampled companies. The banking and manufacturing bidder companies realized a capital gain of around between 1.11 and 26.2%, and this was mainly because of the information that was leaked to the market before bid details were released.

The subject matter was approached from two perspectives in the next stage of analysis. The first approach was to explore how M&A affect the shares' valuation and then how shareholders wealth is affected by M&A. Table 4.2 and 4.3 represents the results in which the shareholders' returns and share valuation are subjected to a significance test (t-test). From the results, overall, there are no changes in bidder companies of both banking and manufacturing firms share prices and total shareholders returns.

The two main findings that the study sought to untangle include; First, from the results, it is established that there were significant changes in some firms while others did not exhibit any significant changes. It was established from the study that 5 out of 10 sampled firms from both the banking and manufacturing sector showed significant changes in the price of the shares within the 11-day event window. Sector-wise 2 out of 5 bidder banks exhibit significant share price changes while three out of five manufacturing firms exhibit significant share price changes. These results tend to imply that the past banks and manufacturing firms of India do not create wealth for both bidding and combined entity.

These findings are similar to some of the researchers who sought to evaluate the efficiency of the information leaked about the M&A of companies quoted on Bombay stock

exchange. Numerous studies have shown that M&A announcements have no significant effect on stock prices in developing countries. The fundamental conclusion that can be drawn from the results above is that there was no significant change stock price reaction to the merger approvals. From above the findings, some reactions in both the banking and manufacturing industries to the merger announcements were adverse while others were positive. Under the efficient market conditions, investors should expect significant variations in the share prices or returns after a merger or the approval of an acquisition by the companies.

Manufacturing firms and banks merge or acquired with one another for a variety of reasons with one another. Some join with each other so that they can provide services to their clients efficiently by combining their resources and efforts. The gains from efficiency may come by virtue of the size of the merged entity and as a result supply of goods for manufacturing entity or serving of the customers becomes considerably cheaper on a large scale. Efficiency gains may also be achieved through sharing or collaborating expertise. A manufacturing firm or a bank may have unutilized assets that the other firm may utilize. A combined entity may also become profitable as a result of a change of management. Hubris and power are other reasons that these firms engage in acquisitions. The management of bidder bank may be motivated more by the desire to manage ever-larger banks than by any possible inefficiency (Liargovas and Repousis, 2011). The first outcome above shows that in India, mergers and acquisition are driven by non-market-based fundamentals, but rather efficiency gain and enjoying the economies of scale.

The manufacturing and banking firms in India are mostly involved in mergers with another domiciled firm, and as a result, there are no significance share price reactions around the event dates. For example, Motherson Sumi Systems vs. Reydell Automotive Group, Reliance Industries vs. Hamleys PLC, United Breweries vs. Chennai Breweries Pvt Ltd, Tata

Steel Ltd. vs. Tata steel BSL, and State Bank of India vs. State Bank of Hyderabad. In order to focus on the core business of providing banking services or products through manufacturing, these firms tend to concentrate less on non-core business. If the past study is something to go by lower returns is usually associated with the negotiated mergers while takeovers result in high yields. All mergers that have been sampled in this study are the takeovers that are negotiated.

The fundamental question of whether the shareholders of the acquiring gain wealth or not is quite less certain and the majority of the studies that have been conducted have concluded that shareholders of acquiring firms usually receive small or zero returns from the mergers and some of them even get zero AR. The results of the finding have shown that announcement or takeover bid does not significantly affect the shareholders total accumulated return. Testing for significance using a 95 % confidence level, both studies has found that there was a weak relationship between company returns for the period before and after the mergers and acquisition announcements.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### **5.1 Introduction**

This is the last chapter of the dissertation that highlights the recommendations and conclusions based on the findings. The goal of the study was to find out the effect of M&A on shareholders wealth in India using a case study of manufacturing and banking sector. The chapter is organized as follows: conclusions, recommendations for policy, and further research.

#### **5.2 Conclusions**

The research concludes that the approval of M&A in both the banking and manufacturing sector has a partially significant effect on share valuation in the stock market. Furthermore, the total accumulated return of shareholders is not affected in any way by the announcement of the M&A. We can conclude from this that both bidder and target companies in India in the past was not wealth-creating projects in both the banking and manufacturing sectors. Bombay stock exchange research conducted in the past on banks and manufacturing sectors seems to concur that the merger announcement had no significant effect on stock markets in India. Both the bidding and target company did not experience the shareholders' wealth gain as a result of M&A in both the banking and manufacturing sectors.

Comparatively, the research results on M&A effects on shareholders wealth in banking and manufacturing sectors from other developed countries, it is evident that the bidder's banks and manufacturing firms' shareholders' returns are considerably low. In principle, the expected benefits accrued for both the bidder and the target is reflected by the market reaction to an M&A announcement. The event studies were purposely meant to measure any abnormal changes in the stock price around the day of the announcement as a pointer of the perceived

economic impact of the merger. The bidder's companies return to the shareholders is a function of two main factors such as expected gains from the synergy and the offer terms, the former reflects on how competitive environment has been affected by the forces of change in both manufacturing and banking industry.

There has been a trend by the past researchers to increasingly laud the profitability increase as a result of M&A in the manufacturing and banking sector in developed nations. This has been the indicator that bidder companies in both industries are willing to pay high costs in order to acquire the target firms and therefore would favorably to an announcement of the merger and eventually lead to high AR of the target. Equally, the Indian market has a scenario of marginal or stagnated increase profitability in both sectors during a post-merger. This is because acquirers have demonstrated the willingness to pay a high price for the target firms and therefore resulting to high returns to the shareholders compared to those in developing world countries.

The present findings seem to concur by giving an explanation that the firms from both sectors want to benefit from in-market consolidation and exploit the economy through the mergers of equal or inferior type of deals to exploit not synergistic gains but economies of scale. However, one of the major points to note in this research is that the low positive AR to the bidder's firms' shareholders are consistent with related local research studies conducted in India. Both sectors companies of the economy experience high competition in the markets, the business environment is highly regulated, and the pattern of declining or stagnated growth in profitability, which is spreading a gloomy picture of general future performance.

### 5.3 Recommendations

Manufacturing companies, investment banks, fund managers, Bombay stock exchange and other stakeholders in both sectors should not be jittery in light of the above findings on a proposed merger or acquisition and anticipated reaction of the market. The research suggests that manufacturing or bank merger should not be used as a short-term predictor of the capital gains for both the bidder and target company. Thus, the research recommends that companies in India should be careful when deciding to undergo M&A activity.

In order to make proper investment, the study aimed at finding whether M&A create shareholders wealth. In the bank mergers sample studied, it is evident that rush decisions should be avoided when planning to invest in a bank that is planning to acquire another one because the fundamentals of the market regularly change. The wrong impression that is depicted in this situation is that merging banks are mature, and they could have undertaken these mergers to increase new services or region to continue to perform at company growing levels. Therefore, mergers in the banking sector in the future should be based on the returns on shareholders wealth as a result of post-merger synergies.

M&A result in despair or enthusiasm, as shown by various past studies. This is demonstrated by how the stock prices of both bidder and target listed company share reacts to the announcement of a merger or an acquisition. However, there is a possibility of disquiet according to the present study. Therefore, there is need to enforce a regulation that would compel the bidding firms to fully disclose the reasons for the M&As since this could be one of the reasons why merger announcements did not trigger any significant reactions.

Lastly, the study recommends the non-market-based assessment tools should be deployed by Indian market regulators to help in assessing the past performance of both bidder

and target company in order to establish the possible market skepticism prior and after the event window.

#### **5.4 Limitations of the Study**

The study was limited to mergers from two sectors of the Indian economy; 5 bidder companies from each industry. The target companies that had not been listed on BSE at the time of the merger with the bidder were excluded from the sample since the data on market shares could not be explicitly be determined.

The event windows are usually characterized by the information leakages, and therefore, the speculative tendencies limit this study. As a result, the market fundamentals sometimes do not drive the trading patterns but risky behavior due to colossal participation by the retail investors who are engaging in profit-making and those positioning themselves for the post-merger purchase bids.

The data obtained was only for mergers that were listed at the BSE leaving out a significant proportion of privately-owned companies that completed during the period under consideration for the apparent reason of the fact that their share prices could not be established and therefore significantly lowered the sampled deals for analysis.

The scope of the data was limited since the information on target firms in 2010 could not be sourced from the BSE since their historical data was not expressly documented. Such companies were technically from the sample for the target company since they were not listed. In addition, one must also look at long-run effects versus short-run effects. This research focused on a short time frame of 5 days after the merger. The motivation might be for a longer period, and therefore, it would be prudent to see how things turn out when the event window is long enough.

## 5.5 Suggestions for Further Research

The possible future study in this area would be finding out effect of M&A on shareholders wealth using the long event window to determine the long term returns on the bidder companies in order to assess the consequences of the M&A. The model was chosen to study the long-term effect largely influence the calculating of the AR. The beta risk and size of the company is adjusted, and therefore, it is highly recommended. The studies of the future may consider making improvements to the model applied currently.

A simple methodology was used in this research to determine the AR based on the market model study. There is need to include more independent variables in further research such as firm size and dividend expectations in order whether the market would react positively when other to announcements of mergers and acquisition when other factors are included.

Additionally, some of the studies in the past have shown that cash payment provides better returns to both bidder and the target company. Most of the M&A in India have been characterized by both share and cash payments. This call for further research to be conducted to establish how payment policy has an impact on shareholders wealth.

The M&A is explained by the dominant rationale that when the company engages in M&A, it helps to boost a firm's financial performance. Apart from this other important reason include economy of scope and scale, synergy, diversification, geographical expansion, transfer of resources Vertical integration, easy management of a business, managers hubris, tax advantages, human capital. From the recent findings of the studies conducted to find out the driving factors for firms to engage in M&A.



## References

- Asquith, P., Bruner, R. and Mullins, D. (1983). The gains to bidding firms from merger. *Journal of Financial Economics*, [online] 11(1-4), pp.121-139. Available at: [https://www.sciencedirect.com/science/article/pii/0304405X83900077/pdf?md5=f5d841d6493e4fbe462482306864586e&pid=1-s2.0-0304405X83900077-main.pdf&\\_valck=1](https://www.sciencedirect.com/science/article/pii/0304405X83900077/pdf?md5=f5d841d6493e4fbe462482306864586e&pid=1-s2.0-0304405X83900077-main.pdf&_valck=1) [Accessed 6 Aug. 2019].
- Bo Jakobsen, J. and Voetmann, T. (2003). Post-acquisition performance in the short and long run. Evidence from the Copenhagen Stock Exchange 1993–1997. *The European Journal of Finance*, [online] 9(4), pp.323-342. Available at: <https://openarchive.cbs.dk/bitstream/handle/10398/7190/wp2000-4.pdf?sequence=1> [Accessed 3 Aug. 2019].
- Dickerson, A., Gibson, H. and Tsakalotos, E. (1997). The Impact of Acquisitions on Company Performance: Evidence from a Large Panel of UK Firms. *Oxford Economic Papers*, [online] 49(3), pp.344-361. Available at: <https://academic.oup.com/oep/article-pdf/49/3/344/6968462/49-3-344.pdf> [Accessed 6 Jun. 2019].
- Brown, S. and Warner, J. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, [online] 14(1), pp.3-31. Available at: <https://www.sciencedirect.com/science/article/pii/0304405X8590042X> [Accessed 4 Aug. 2019].
- Bseindia.com. (2019). *BSE Ltd. (Bombay Stock Exchange) | Livestock Market Updates for S&P BSE SENSEX, Stock Quotes & Corporate Information*. [online] Available at: <https://www.bseindia.com> [Accessed 7 Aug. 2019].

Bseindia.com. (2019). *BSE Sensex - Live Sensex and Stock Values*. [online] Available at: <https://www.bseindia.com/sensex/code/16/> [Accessed 6 Aug. 2019]

Banerjee, A. and Eckard, E. (1998). Are Mega-Mergers Anticompetitive? Evidence from the First Great Merger Wave. *The RAND Journal of Economics*, [online] 29(4), p.803. Available at: [https://www.researchgate.net/profile/Edwin\\_Eckard/publication/24049054\\_Are\\_Mega-Mergers\\_Anticompetitive\\_Evidence\\_from\\_the\\_First\\_Great\\_Merger\\_Wave/links/588f713ca6fdcc2351be7501/Are-Mega-Mergers-Anticompetitive-Evidence-from-the-First-Great-Merger-Wave.pdf](https://www.researchgate.net/profile/Edwin_Eckard/publication/24049054_Are_Mega-Mergers_Anticompetitive_Evidence_from_the_First_Great_Merger_Wave/links/588f713ca6fdcc2351be7501/Are-Mega-Mergers-Anticompetitive-Evidence-from-the-First-Great-Merger-Wave.pdf) [Accessed 25 Jul. 2019].

Cartwright, S. and Schoenberg, R. (2006). Thirty Years of Mergers and Acquisitions Research: Recent Advances and Future Opportunities. *British Journal of Management*, [online] 17(1), pp. S1-S5. Available at: <https://scinapse.io/papers/2011956936> [Accessed 24 Jul. 2019].

Duso, T., Gugler, K. and Yurtoglu, B. (2007). Is the Event Study Methodology Useful for Merger Analysis? A Comparison of Stock Market and Accounting Data. *SSRN Electronic Journal*, [online] 2(1), pp.1-2. Available at: <https://www.econstor.eu/bitstream/10419/94154/1/sfb-tr15-dp163.pdf> [Accessed 27 Jul. 2019].

Froese, H. (2013). Predicting Takeover Targets: An Empirical Analysis of the European Market. *Semantic Scholar Journal*, [online] 2(1), pp.13-45. Available at: <https://pdfs.semanticscholar.org/6677/998ad47be93dd3bdae8637928c675004b1da.pdf> [Accessed 26 Jul. 2019].

Gregoriou, G. and Depamphilis, D. (2012). Mergers acquisitions and other restructuring activities. *The Journal of Wealth Management*, [online] 15(3), pp.5-6. Available at: <http://www.gbv.de/dms/zbw/591962241.pdf> [Accessed 23 Jul. 2019].

Hitt, M., Harrison, J. and Ireland, R. (2001). Mergers and acquisitions. 3rd ed. Oxford: Oxford University Press, pp.81-90. Available at: <https://epdf.pub/queue/mergers-and-acquisitions-a-guide-to-creating-value-for-stake-holders.html> [Accessed 23 Jul. 2019].

Joshi, V. (2011). Mergers in banking industry of India: some emerging issues. Asian Journal of Business and Management Sciences, [online] 2(1), pp.157-165. Available at: [http://ajbms.org/articlepdf/ajbms\\_2011\\_1231.pdf](http://ajbms.org/articlepdf/ajbms_2011_1231.pdf) [Accessed 24 Jul. 2019].

Jyrki, A. (2002). Mergers and Acquisitions: Reasons and Results. The Research Institute of the Finnish Economy (ETLA), Helsinki, [online] 324(792), pp.11-12. Available at: <https://www.econstor.eu/bitstream/10419/63797/1/344861414.pdf> [Accessed 10 Jul. 2019].

King, D., Slotegraaf, R. and Kesner, I. (2008). Performance Implications of Firm Resource Interactions in the Acquisition of R&D-Intensive Firms. Organization Science, [online] 19(2), pp.327-340. Available at: [https://kelley.iu.edu/Faculty/Marketing/rsloTEGR/publications/OS\\_King\\_Kesner\\_08.pdf](https://kelley.iu.edu/Faculty/Marketing/rsloTEGR/publications/OS_King_Kesner_08.pdf) [Accessed 26 Jul. 2019].

Klein, P. (2001). Were the Acquisitive Conglomerates Inefficient? SSRN Electronic Journal, [online] 2(1), pp.755-756. Available at: <https://pdfs.semanticscholar.org/e8b4/a26c2c8ba00c406043b34d7df2f3263a6c37.pdf> [Accessed 23 Jul. 2019].

Lang, L., Stulz, R. and Walkling, R. (1991). A test of the free cash flow hypothesis. Journal of Financial Economics, [online] 29(2), pp.315-335. Available at: [https://papers.ssrn.com/sol3/Delivery.cfm/SSRN\\_ID917413\\_code20178.pdf?abstractid=917413&mirid=1](https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID917413_code20178.pdf?abstractid=917413&mirid=1) [Accessed 3 Aug. 2019].

Liargovas, P. and Repousis, S. (2011). The Impact of Mergers and Acquisitions on the Performance of the Greek Banking Sector: An Event Study Approach. *International Journal of Economics and Finance*, [online] 3(2), pp.91-92. Available at: [https://www.researchgate.net/profile/Spyridon\\_Repousis/publication/47456937\\_The\\_Impact\\_of\\_Mergers\\_and\\_Acquisitions\\_on\\_the\\_Performance\\_of\\_the\\_Greek\\_Banking\\_Sector\\_An\\_Event\\_Study\\_Approach/links/02e7e52094a6f5ac7c000000/The-Impact-of-Mergers-and-Acquisitions-on-the-Performance-of-the-Greek-Banking-Sector-An-Event-Study-Approach.pdf](https://www.researchgate.net/profile/Spyridon_Repousis/publication/47456937_The_Impact_of_Mergers_and_Acquisitions_on_the_Performance_of_the_Greek_Banking_Sector_An_Event_Study_Approach/links/02e7e52094a6f5ac7c000000/The-Impact-of-Mergers-and-Acquisitions-on-the-Performance-of-the-Greek-Banking-Sector-An-Event-Study-Approach.pdf) [Accessed 4 Aug. 2019].

Mackinlay, C. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature*, [online] 35(1), pp.13-39. Available at: <https://pdfs.semanticscholar.org/aac6/83a678a12a3dcd73389aac7289868847ea73.pdf> [Accessed 3 Aug. 2019].

Malmendier, U. and Tate, G. (2002). CEO Overconfidence and Corporate Investment. *SSRN Electronic Journal*, [online] 29(2), pp.12-23. Available at: [https://papers.ssrn.com/sol3/Delivery.cfm/SSRN\\_ID354387\\_code021203600.pdf?abstractid=354387&mirid=1](https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID354387_code021203600.pdf?abstractid=354387&mirid=1) [Accessed 5 Aug. 2019].

Manne, H. (1965). Mergers and the Market for Corporate Control. *Journal of Political Economy*, [online] 73(2), pp.110-120. Available at: <https://are.berkeley.edu/~cmantinori/prclass/Manne.pdf> [Accessed 3 Aug. 2019].

Martynova, M. and Renneboog, L. (2008). A century of corporate takeovers: What have we learned and where do we stand? *Journal of Banking & Finance*, [online] 32(10), pp.2148-2177. Available at:

[http://www.academia.edu/download/40020337/Martynova\\_and\\_Renneboog\\_2008\\_a\\_century\\_of\\_corporate\\_takeovers.pdf](http://www.academia.edu/download/40020337/Martynova_and_Renneboog_2008_a_century_of_corporate_takeovers.pdf) [Accessed 27 Jul. 2019].

Moneycontrol.com. (2019). Stock/Share Market Investment, Live BSE/NSE Sensex & Nifty, Mutual Funds, Commodity Market, Finance Portfolio Investment/Management, Startup news India, Financial News - Moneycontrol. [online] Available at: <https://www.moneycontrol.com/> [Accessed 6 Aug. 2019].

Mourdoukoutas, P. (2011). Do Mergers and Acquisitions Enhance or Destroy Shareholder Value? [online] Forbes.com. Available at: <https://www.forbes.com/sites/panosmourdoukoutas/2011/10/04/do-mergers-and-acquisitions-enhance-or-destroy-shareholder-value/#739f737ee9a9> [Accessed 26 Jul. 2019].

Nguyen, H., Yung, K. and Sun, Q. (2012). Motives for Mergers and Acquisitions: Ex-Post Market Evidence from the US. *Journal of Business Finance & Accounting*, [online] 39(9-10), pp.1360-1361. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jbfa.12000> [Accessed 11 Jul. 2019].

Nseindia.com. (2019). NSE - National Stock Exchange of India Ltd. [online] Available at: <https://www.nseindia.com/> [Accessed 1 Aug. 2019].

Pandya, V. (2017). Mergers and Acquisitions Trends – The Indian Experience. *International Journal of Business Administration*, [online] 9(1), p.44. Available at: [https://www.researchgate.net/publication/322204485\\_Mergers\\_and\\_Acquisitions\\_Trends\\_-\\_The\\_Indian\\_Experience](https://www.researchgate.net/publication/322204485_Mergers_and_Acquisitions_Trends_-_The_Indian_Experience) [Accessed 7 Aug. 2019].

Pradhan, J., and Abraham, V. (2005). Overseas Mergers and Acquisitions by Indian Enterprises: Patterns and Motivations. *Indian Journal of Economics*, [online] 33(30), pp.17-18. Available at:

[https://papers.ssrn.com/sol3/Delivery.cfm/SSRN\\_ID1515708\\_code1280300.pdf?abstractid=1515708&mirid=1](https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID1515708_code1280300.pdf?abstractid=1515708&mirid=1) [Accessed 10 Jul. 2019].

Raghavendra Rau, P. (1998). Glamour, value and the post-acquisition performance of acquiring firms. *Journal of Financial Economics*, [online] 49(2), pp.223-253. Available at: <https://www.ssrn.com/abstract=262687> [Accessed 4 Aug. 2019].

Rani, N., Yadav, S. and Jain, P. (2011). Impact of Mergers and Acquisitions on Shareholders' Wealth in Short-Run: An Empirical Study of Indian Pharmaceutical Industry. *Vikalpa: The Journal for Decision Makers*, [online] 40(3), pp.293-312. Available at: <https://journals.sagepub.com/doi/full/10.1177/0256090915600842> [Accessed 25 Jul. 2019].

Resnik, D. (2011). What is Ethics in Research & Why is it Important? *National Institute of Environment Health Science*, [online] 1(82), pp.2-4. Available at: <https://www.veronaschools.org/cms/lib02/NJ01001379/Centricity/Domain/588/What%20is%20Ethics%20in%20Research%20Why%20is%20it%20Important.pdf> [Accessed 3 Aug. 2019].

Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers. *The Journal of Business*, [online] 59(2), pp.197-216. Available at: <https://www.jstor.org/stable/2353017> [Accessed 26 Jul. 2019].

Sehleanu, M. (2013). Creating or destroying value through mergers and acquisitions? Knowledge society and dynamism through research, [online] 46(1), pp.593-598. Available at: <http://steconomiceuoradea.ro/anale/volume/2015/n1/067.pdf> [Accessed 27 Jul. 2019].

Shakya, S. (2014). Mergers & Acquisitions in Indian Banking Sector: Regulatory Issues & Challenges. *SSRN Electronic Journal*, [online] 1(2), pp.157-165. Available at: [https://papers.ssrn.com/sol3/Delivery.cfm/SSRN\\_ID2399288\\_code2203947.pdf?abstractid=2399288&mirid=1](https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2399288_code2203947.pdf?abstractid=2399288&mirid=1) [Accessed 7 Aug. 2019]



## Time series Data for Bidders Company

Bidder Company	Event Date	Day (T)	Average Share Price	Market Index	Rit	Rmt	Alpha ( $\alpha$ )	Beta ( $\beta$ )
Bank of Baroda	25-Mar-19	-5	118.2	37808.91	0.020207101	0.01138142	0.0002896	1.7500
Bank of Baroda	26-Mar-19	-4	120.8	38233.41	0.019937762	0.011227512	0.0002896	1.7500
Bank of Baroda	27-Mar-19	-3	121.55	38132.88	-0.004311792	-0.00262938	0.0002896	1.7500
Bank of Baroda	28-Mar-19	-2	130.1	38545.72	0.019235733	0.010826352	0.0002896	1.7500
Bank of Baroda	29-Mar-19	-1	128.65	38672.91	0.006064122	0.003299718	0.0002896	1.7500
Bank of Baroda	01-Apr-19	0	132.7	38871.87	0.009292817	0.005144687	0.0002896	1.7500
Bank of Baroda	02-Apr-19	1	133.2	39056.65	0.008608357	0.004753566	0.0002896	1.7500
Bank of Baroda	03-Apr-19	2	132.05	38877.12	-0.007754533	-0.00459666	0.0002896	1.7500
Bank of Baroda	04-Apr-19	3	131.2	38684.72	-0.008371005	-0.00494893	0.0002896	1.7500
Bank of Baroda	05-Apr-19	4	130.6	38862.23	0.008319725	0.004588633	0.0002896	1.7500
Bank of Baroda	08-Apr-19	5	130	38700.53	-0.006991876	-0.00416085	0.0002896	1.7500
State Bank of India	27-Mar-17	-5	279.45	29237.15	-0.390955879	-0.24452843	0.0002896	1.6000
State Bank of India	28-Mar-17	-4	282.1	29409.52	0.009722546	0.005895581	0.0002896	1.6000
State Bank of India	29-Mar-17	-3	288.45	29531.43	0.006922026	0.004145256	0.0002896	1.6000
State Bank of India	30-Mar-17	-2	291.05	29647.42	0.006573904	0.00392768	0.0002896	1.6000
State Bank of India	31-Mar-17	-1	293.4	29620.5	-0.001163192	-0.000908	0.0002896	1.6000
State Bank of India	03-Apr-17	0	293.15	29910.22	0.015939318	0.009781064	0.0002896	1.6000
State Bank of India	04-Apr-17	1	293.15	29910.22	0.000289616	0	0.0002896	1.6000
State Bank of India	05-Apr-17	2	297.35	29974.24	0.003714265	0.002140406	0.0002896	1.6000
State Bank of India	06-Apr-17	3	292.85	29927.34	-0.002213867	-0.00156468	0.0002896	1.6000
State Bank of India	07-Apr-17	4	289.45	29706.61	-0.011511232	-0.00737553	0.0002896	1.6000
State Bank of India	10-Apr-17	5	289.35	29575.74	-0.006759051	-0.00440542	0.0002896	1.6000
Kotak Mahindra Bank	13-Nov-14	-5	555	27940.64	-0.030448942	-0.05528518	0.0002896	0.5560
Kotak Mahindra Bank	14-Nov-14	-4	546.75	28046.66	0.002399343	0.003794473	0.0002896	0.5560
Kotak Mahindra Bank	17-Nov-14	-3	554.05	28177.88	0.002890935	0.004678632	0.0002896	0.5560
Kotak Mahindra Bank	18-Nov-14	-2	542.53	28163.29	1.72919E-06	-0.00051778	0.0002896	0.5560
Kotak Mahindra Bank	19-Nov-14	-1	538.78	28032.85	-0.002285532	-0.00463156	0.0002896	0.5560



Kotak Mahindra Bank	20-Nov-14	0	578.35	28067.56	0.00097805	0.00123819	0.0002896	0.5560
Kotak Mahindra Bank	21-Nov-14	1	599.58	28334.63	0.005580098	0.009515255	0.0002896	0.5560
Kotak Mahindra Bank	24-Nov-14	2	599.88	28499.54	0.003525584	0.005820087	0.0002896	0.5560
Kotak Mahindra Bank	25-Nov-14	3	580.28	28338.05	-0.002860906	-0.00566641	0.0002896	0.5560
Kotak Mahindra Bank	26-Nov-14	4	580.23	28386.19	0.001234135	0.001698776	0.0002896	0.5560
Kotak Mahindra Bank	27-Nov-14	5	578.8	28438.91	0.001322242	0.001857241	0.0002896	0.5560
ICICI Bank	17-May-10	-5	163.84	16835.56	-0.365695049	-0.40800966	0.0002896	0.8970
ICICI Bank	18-May-10	-4	161.67	16875.76	0.002431475	0.002387803	0.0002896	0.8970
ICICI Bank	19-May-10	-3	149.9	16408.49	-0.024547262	-0.02768883	0.0002896	0.8970
ICICI Bank	20-May-10	-2	151.21	16519.68	0.00636802	0.00677637	0.0002896	0.8970
ICICI Bank	21-May-10	-1	151.78	16445.61	-0.003732301	-0.00448374	0.0002896	0.8970
ICICI Bank	24-May-10	0	151.29	16469.55	0.001595386	0.001455708	0.0002896	0.8970
ICICI Bank	25-May-10	1	147.15	16022.48	-0.02405967	-0.02714525	0.0002896	0.8970
ICICI Bank	26-May-10	2	154.14	16387.84	0.020743873	0.022802962	0.0002896	0.8970
ICICI Bank	27-May-10	3	155.78	16666.4	0.015536794	0.016997969	0.0002896	0.8970
ICICI Bank	28-May-10	4	157.23	16863.06	0.010874027	0.011799789	0.0002896	0.8970
ICICI Bank	31-May-10	5	157.87	16944.63	0.004628585	0.0048372	0.0002896	0.8970
State Bank of India	19-May-17	-5	308	30464.92	1.276945642	0.797910016	0.0002896	1.6000
State Bank of India	22-May-17	-4	294.3	30570.97	0.005859301	0.003481053	0.0002896	1.6000
State Bank of India	23-May-17	-3	288.85	30365.25	-0.0104772	-0.00672926	0.0002896	1.6000
State Bank of India	24-May-17	-2	283.15	30301.64	-0.00306211	-0.00209483	0.0002896	1.6000
State Bank of India	25-May-17	-1	290.1	30750.03	0.023965694	0.014797549	0.0002896	1.6000
State Bank of India	26-May-17	0	288.45	31028.21	0.014764008	0.009046495	0.0002896	1.6000
State Bank of India	29-May-17	1	284	31109.28	0.00447007	0.002612784	0.0002896	1.6000
State Bank of India	30-May-17	2	288.85	31159.4	0.002867368	0.001611095	0.0002896	1.6000
State Bank of India	31-May-17	3	288.3	31145.8	-0.000408729	-0.00043647	0.0002896	1.6000
State Bank of India	01-Jun-17	4	287.45	31137.59	-0.000132142	-0.0002636	0.0002896	1.6000
State Bank of India	02-Jun-17	5	287.05	31273.29	0.007262538	0.004358077	0.0002896	1.6000
Motherson Sumi Systems	26-Mar-18	-5	210.53	33066.41	0.059346837	0.057337108	0.0002896	1.0300

Motherson Sumi Systems	27-Mar-18	-4	210.13	33174.39	0.003653132	0.00326555	0.0002896	1.0300
Motherson Sumi Systems	28-Mar-18	-3	207.3	32968.68	-0.006097278	-0.00620087	0.0002896	1.0300
Motherson Sumi Systems	29-Mar-18	-2	207.3	32968.68	0.000289616	0	0.0002896	1.0300
Motherson Sumi Systems	30-Mar-18	-1	207.3	32968.68	0.000289616	0	0.0002896	1.0300
Motherson Sumi Systems	02-Apr-18	0	215.6	33255.36	0.009246007	0.008695526	0.0002896	1.0300
Motherson Sumi Systems	03-Apr-18	1	221.57	33370.63	0.00385981	0.003466208	0.0002896	1.0300
Motherson Sumi Systems	04-Apr-18	2	222.13	33019.07	-0.010561447	-0.01053501	0.0002896	1.0300
Motherson Sumi Systems	05-Apr-18	3	225.9	33596.8	0.01831138	0.017496859	0.0002896	1.0300
Motherson Sumi Systems	06-Apr-18	4	229.27	33626.97	0.001214558	0.000898002	0.0002896	1.0300
Motherson Sumi Systems	09-Apr-18	5	230.83	33788.54	0.005238533	0.004804774	0.0002896	1.0300
Reliance Industries	03-May-10	-5	511.88	17386.08	-0.514281526	-0.48544447	0.0002896	1.0600
Reliance Industries	04-May-10	-4	510.58	17137.14	-0.014887836	-0.01431835	0.0002896	1.0600
Reliance Industries	05-May-10	-3	510.33	17087.96	-0.002752362	-0.00286979	0.0002896	1.0600
Reliance Industries	06-May-10	-2	503.93	16987.53	-0.005940256	-0.00587724	0.0002896	1.0600
Reliance Industries	07-May-10	-1	516.4	16769.11	-0.013339511	-0.01285767	0.0002896	1.0600
Reliance Industries	10-May-10	0	539.7	17330.55	0.035779061	0.033480608	0.0002896	1.0600
Reliance Industries	11-May-10	1	533.9	17141.53	-0.01127154	-0.01090675	0.0002896	1.0600
Reliance Industries	12-May-10	2	541.48	17195.81	0.003646189	0.003166578	0.0002896	1.0600
Reliance Industries	13-May-10	3	535.9	17265.87	0.004608319	0.004074248	0.0002896	1.0600
Reliance Industries	14-May-10	4	521.83	16994.6	-0.016364407	-0.01571134	0.0002896	1.0600
Reliance Industries	17-May-10	5	508.28	16835.56	-0.009630147	-0.00935827	0.0002896	1.0600
United Breweries	03-Mar-11	-5	475.3	14489.76	-0.130407575	-0.13933602	0.0002896	0.9380
United Breweries	04-Mar-11	-4	469.25	18486.45	0.259016829	0.275828585	0.0002896	0.9380
United Breweries	07-Mar-11	-3	487.2	18222.67	-0.013094546	-0.01426883	0.0002896	0.9380
United Breweries	08-Mar-11	-2	488.95	18439.65	0.011458519	0.011907146	0.0002896	0.9380
United Breweries	09-Mar-11	-1	476.5	18469.95	0.001830936	0.001643198	0.0002896	0.9380
United Breweries	10-Mar-11	0	472.9	18327.98	-0.006920358	-0.00768654	0.0002896	0.9380
United Breweries	11-Mar-11	1	470.3	18174.09	-0.007586256	-0.00839645	0.0002896	0.9380
United Breweries	14-Mar-11	2	484.65	18439.48	0.013986908	0.014602657	0.0002896	0.9380

United Breweries	15-Mar-11	3	473.75	18167.64	-0.013538644	-0.01474228	0.0002896	0.9380
United Breweries	16-Mar-11	4	481.65	18358.69	0.010153577	0.01051595	0.0002896	0.9380
United Breweries	17-Mar-11	5	475.75	18149.87	-0.010379618	-0.01137445	0.0002896	0.9380
Tata Steel Ltd.	11-May-18	-5	607.25	35535.79	1.063568372	0.957908789	0.0002896	1.1100
Tata Steel Ltd.	14-May-18	-4	610.35	35556.71	0.000943076	0.000588702	0.0002896	1.1100
Tata Steel Ltd.	15-May-18	-3	625.95	35543.94	-0.000109034	-0.00035914	0.0002896	1.1100
Tata Steel Ltd.	16-May-18	-2	621.25	35387.88	-0.004583974	-0.00439062	0.0002896	1.1100
Tata Steel Ltd.	17-May-18	-1	610.3	35149.12	-0.00719949	-0.00674694	0.0002896	1.1100
Tata Steel Ltd.	18-May-18	0	591.4	34848.3	-0.009210201	-0.00855839	0.0002896	1.1100
Tata Steel Ltd.	21-May-18	1	577	34616.13	-0.007105542	-0.0066623	0.0002896	1.1100
Tata Steel Ltd.	22-May-18	2	576.8	34651.24	0.001415452	0.001014267	0.0002896	1.1100
Tata Steel Ltd.	23-May-18	3	540.05	34344.91	-0.009523202	-0.00884038	0.0002896	1.1100
Tata Steel Ltd.	24-May-18	4	548.2	34663.11	0.010573585	0.009264837	0.0002896	1.1100
Tata Steel Ltd.	25-May-18	5	568.25	34924.87	0.00867183	0.007551544	0.0002896	1.1100
TVS Srichakra	02-Jun-15	-5	1785.1	27188	-0.263329842	-0.22152896	0.0002896	1.1900
TVS Srichakra	03-Jun-15	-4	1720.05	26837.2	-0.015064658	-0.01290275	0.0002896	1.1900
TVS Srichakra	04-Jun-15	-3	1707.4	26813.42	-0.000764823	-0.00088608	0.0002896	1.1900
TVS Srichakra	05-Jun-15	-2	1692.75	26768.49	-0.001704412	-0.00167565	0.0002896	1.1900
TVS Srichakra	08-Jun-15	-1	1647.85	26523.09	-0.010619703	-0.0091675	0.0002896	1.1900
TVS Srichakra	09-Jun-15	0	1661	26481.25	-0.001587601	-0.00157749	0.0002896	1.1900
TVS Srichakra	10-Jun-15	1	1665	26840.5	0.016433397	0.013566203	0.0002896	1.1900
TVS Srichakra	11-Jun-15	2	1678.4	26730.98	-0.004566061	-0.0040804	0.0002896	1.1900
TVS Srichakra	12-Jun-15	3	1709.7	26425.3	-0.013318535	-0.01143542	0.0002896	1.1900
TVS Srichakra	15-Jun-15	4	1955.45	26586.55	0.007551123	0.006102107	0.0002896	1.1900
TVS Srichakra	16-Jun-15	5	1980.35	26686.51	0.004763773	0.003759796	0.0002896	1.1900

<b>Selected Target Companies</b>	<b>Event Date</b>	<b>Day (T)</b>	<b>Average Share Price</b>	<b>Market Share Index</b>	<b>Rit</b>	<b>Rmt</b>	<b>Alpha (α)</b>	<b>Average vol (β)</b>
Vijaya Bank	25-Mar-19	-5	51.4	37088.91	0.019366522	0.014201002	0.0020413	
Vijaya Bank	26-Mar-19	-4	52.1	38233.41	0.039688403	0.030858281	0.0020413	
Vijaya Bank	27-Mar-19	-3	52.05	38132.88	0.001166538	-0.002629376	0.0020413	
Vijaya Bank	28-Mar-19	-2	52.05	38545.72	0.01524945	0.010826352	0.0020413	
Vijaya Bank	29-Mar-19	-1	53.3	38672.91	0.006066956	0.003299718	0.0020413	
Vijaya Bank	01-Apr-19	0	54.3	38871.87	0.008317818	0.005144687	0.0020413	
Vijaya Bank	02-Apr-19	1	53.05	39056.65	0.007840651	0.004753566	0.0020413	
Vijaya Bank	03-Apr-19	2	55.55	38877.12	0.003566621	-0.004596656	0.0020413	
Vijaya Bank	04-Apr-19	3	56.05	38684.72	-0.00399639	-0.004948926	0.0020413	
Vijaya Bank	05-Apr-19	4	57.05	38862.23	0.007639433	0.004588633	0.0020413	
Vijaya Bank	08-Apr-19	5	57.15	39900.53	0.034636599	0.026717458	0.0020413	
ING Vyasa Bank	13-Nov-14	-5	754.45	27940.6	0.426891845	-0.299743637	0.0020413	
ING Vyasa Bank	14-Nov-14	-4	770.25	28046.66	0.007473247	0.00379591	0.0020413	
ING Vyasa Bank	17-Nov-14	-3	745	28177.88	0.008736422	0.004678632	0.0020413	
ING Vyasa Bank	18-Nov-14	-2	728.45	28163.29	0.001300354	-0.000517782	0.0020413	
ING Vyasa Bank	19-Nov-14	-1	759.85	28032.85	0.004586464	-0.004631561	0.0020413	
ING Vyasa Bank	20-Nov-14	0	814.2	28067.56	0.00381315	0.00123819	0.0020413	
ING Vyasa Bank	21-Nov-14	1	816.8	28334.63	0.01565763	0.009515255	0.0020413	
ING Vyasa Bank	24-Nov-14	2	813.45	28499.54	0.010369844	0.005820087	0.0020413	
ING Vyasa Bank	25-Nov-14	3	786.7	28338.05	0.006067329	-0.005666407	0.0020413	
ING Vyasa Bank	26-Nov-14	4	789.25	28836.19	0.027196113	0.017578485	0.0020413	
ING Vyasa Bank	27-Nov-14	5	789.2	28438.91	0.017673776	-0.013777132	0.0020413	

Bank of Rajasthan Ltd	17-May-10	-5	102.95	16835.56	0.171077199	-	-0.40800966	0.0020413
Bank of Rajasthan Ltd	18-May-10	-4	99.5	16875.76	0.003054445	-	0.002387803	0.0020413
Bank of Rajasthan Ltd	19-May-10	-3	119.4	16408.49	0.009707069	-	-0.027688827	0.0020413
Bank of Rajasthan Ltd	20-May-10	-2	131.3	16519.68	0.004916514	-	0.00677637	0.0020413
Bank of Rajasthan Ltd	21-May-10	-1	144.4	16445.61	0.000138848	-	-0.004483743	0.0020413
Bank of Rajasthan Ltd	24-May-10	0	158.8	16469.55	0.002658957	-	0.001455708	0.0020413
Bank of Rajasthan Ltd	25-May-10	1	158	16022.48	0.009476428	-	-0.027145247	0.0020413
Bank of Rajasthan Ltd	26-May-10	2	162.1	16387.84	0.011716597	-	0.022802962	0.0020413
Bank of Rajasthan Ltd	27-May-10	3	162.6	16666.40	0.009253538	-	0.016997969	0.0020413
Bank of Rajasthan Ltd	28-May-10	4	165.9	16863.06	0.00704795	-	0.011799789	0.0020413
Bank of Rajasthan Ltd	31-May-10	5	168.2	16944.63	0.004093724	-	0.0048372	0.0020413
Tata steel BSL	11-May-18	-5	580.81	35535.79	1.231970213	-	1.097171198	0.0020413
Tata steel BSL	14-May-18	-4	584.11	35556.71	0.002701235	-	0.000588702	0.0020413
Tata steel BSL	15-May-18	-3	597.47	35543.94	0.001638699	-	-0.000359145	0.0020413
Tata steel BSL	16-May-18	-2	595.55	35387.88	0.002880587	-	-0.004390622	0.0020413
Tata steel BSL	17-May-18	-1	584.06	35149.12	0.005522023	-	-0.006746943	0.0020413
Tata steel BSL	18-May-18	0	566.3	34848.30	0.007552659	-	-0.008558393	0.0020413
Tata steel BSL	21-May-18	1	552.33	34616.13	0.005427144	-	-0.006662305	0.0020413
Tata steel BSL	22-May-18	2	552.61	34651.24	0.003178293	-	0.001014267	0.0020413
Tata steel BSL	23-May-18	3	516.28	34344.91	0.007868762	-	-0.008840376	0.0020413
Tata steel BSL	24-May-18	4	525.04	34663.11	0.012427183	-	0.009264837	0.0020413
Tata steel BSL	25-May-18	5	543.04	34924.87	0.010506581	-	0.007551544	0.0020413

**Sources:** National Stock Exchange of India

Money Controller

Bombay Stock Exchange

